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ABSTRACT

This study was performed on a sample of 1,276 part-time (PT) and full-time (FT) Language Learning Center (LLC) students enrolled in French, Spanish, German and Russian during FY67-74. The study sought to: (1) develop a statistical data base for use in future curriculum and testing studies; (2) examine factors affecting language learning success; and (3) to compare French, Spanish, German, and Russian training in terms of student body and instructional effectiveness. Findings include: (1) FT and PT students within each of the four languages have significantly differing psychological and linguistic profiles; (2) PT training is more effective than FT training for exit proficiency goals of S-1 and S-2; (3) the number of hours needed to attain S-1 and S-2 is significantly influenced by measured language aptitude; (4) the number of hours needed to attain S-2 is significantly influenced by prior language training; and (5) each of the four languages requires a different combination of factors to optimize the prediction of exit proficiency and improvement. Appendices contain: psychological measures; sample Modern Language Aptitude Test; language proficiency rating criteria; and tables and figures. (Authors/AM)

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Prediction of Success in French, Spanish, German, and Russian Foreign Language Learning --- An Analysis of FY67-74 Student Data

Elissa R. Natelson, Ph.D.   David Allen, Ph.D.

Central Intelligence Agency

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ABSTRACT

This study was performed on a sample of 1276 part-time (PT) and full-time (FT) Language Learning Center (LLC) students enrolled in French, Spanish, German and Russian during FY67-74. The purpose of the study was threefold:

- To develop a statistical data base which would include both language and psychological measures on former LLC students, appropriately formatted for use in future curriculum and proficiency testing validation studies;
- To examine the factors presumably affecting language learning success, such as prior foreign language experience, course constraints, vocational interests, measured language aptitude, and biographical information;
- To compare French, Spanish, German and Russian training in terms of both student body and instructional effectiveness.

The findings indicate that:

1. FT students enrolled in the four languages have significantly differing psychological and linguistic profiles.

2. PT and FT students within each of the four languages have significantly differing psychological and linguistic profiles.

3. PT training is more effective than FT training for exit proficiency goals of S-1 and S-2.

4. The numbers of hours needed to attain S-1 and S-2 is significantly influenced by measured language aptitude.

5. The number of hours needed to attain S-2 is significantly influenced by prior language training.

6. The mean number of hours for students to attain S-1 in all languages, PT and FT is 269. The mean number of hours for students in PT and FT French, Spanish, and German to attain S-2 is 574. The mean number of hours for PT and FT Russian students to attain S-2 is 783. The mean number of hours for PT and FT French, Spanish, and German students to attain S-3 is 727. The mean number of hours for PT and FT Russian students to attain S-3 is 1069.

7. Each of the four languages requires a different combination of factors to optimize the prediction of exit proficiency and improvement. The most important psychological and linguistic predictors for all four languages seem to be hours in training, MLAT-3, MLAT-4, prior language training, entering proficiency score, and biographical measures describing the individual's experience in and attitude toward foreign language study.

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Prediction of Success in French, Spanish, German, and Russian Foreign Language Learning --- An Analysis of FY67-74 Student Data

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INTRODUCTION

The objectives of this study are to provide the Language Learning Center (LLC/CIA) with a statistical data base appropriate for use in projected curriculum and proficiency testing validation studies, to analyze this collated sample, and to provide answers to the following questions based upon the available empirical data:

1. What are the differences in LLC French, Spanish, German, and Russian training?
2. Is Part-time (PT) training more effective than Full-time (FT) training?

3. How long does it take a student to reach S-1, S-2, and S-3 speaking proficiency? (Definitions of speaking proficiency levels are provided in Appendix C).

4. Which specific linguistic, biographical, and psychological factors can be identified as having significant influence upon a student's overall improvement and exit proficiency?

5. Using the significant factors identified in (4.) above, how can those variables be combined to generate an accurate prediction of exit proficiency?

The results of this study are of functional use not only to the LLC for evaluation of their foreign language training programs, but also to the consumers who send their officers to the LLC for language training. Furthermore, this study can provide guidance for Agency managers and recruiters involved in selection procedures. It will also prove to be valuable for linguists and managers who are concerned with the overall evaluation of language learning performance.

This study is the second large-scale analysis of LLC student data. The first, completed in April 1974, was designed primarily to examine LLC student information files and data collection procedures and to analyze specific dimensions of the LLC language training program. This report provided suggestions, several of which were subsequently adopted by the LLC, on ways of collecting and organizing an adequate data base so that future analyses could be performed more readily. In spite of the limited data available for their study, a preliminary analysis of the data for FY70-72 was completed. This preliminary analysis showed that the variable "hours in training" seemed to be an important factor in the prediction of exit proficiency, and that PT training seemed to be more effective than FT training.

In August 1974, after collecting more student data, the LLC requested an in-depth analysis of LLC training programs. First-cut studies on this project indicated that data were indeed available in CIA files on which to refine the prediction of language success. However, because of the magnitude of such a comprehensive study, specifically in the area of data collection, and the need for linguistic, as well as statistical interpretation of the results, the LLC assigned a linguist to coordinate on this project. The present report highlights preliminary findings from this larger effort.

PROCEDURE

General Method - The basic methodology consisted of:

- -- collection and collation of 209 psychological, linguistic, and biographical measures for 1276 subjects.
- -- analysis of the statistical relationships observed between these measures.

The psychological and linguistic data were obtained from CIA files. Since most of the linguistic and some of the psychological data were hand rather than machine recorded, and since the data were organized under different filing systems, data collection was a lengthy process. Data on an individual was often recorded in several different locations with no cross-referencing. Therefore, collation involved both resolution of discrepancies where necessary, and production of a centralized master file. The specific dimensions on which the subjects were measured will be described in a later section of this report.

Subjects

The subjects were 1276 part-time (PT) and full-time (FT) former LLC students enrolled in French, Spanish, German, and Russian during FY67-74. The specific categories into which these subjects were divided for analysis will be discussed in detail in the Results and Discussion section of this report. Full-time training constitutes 33 hours per week. Part-time training at one facility (Type A) is six to nine hours per week. PT training at another facility (Type B) is one hour per day, five days per week.

Psychological Test Data

Scores on 166 variables from the CIA's Professional Test Battery (PTB), 18 variables from the California Personality Inventory (CPI), 19 language measures and 6 biographical measures were intercorrelated for all subjects. Scores for all of these 209 variables were not available for each of the 1276 subjects. A description of the variables including available sample size appears in Results and Discussion-I, and in Table 1 of Appendix D. Originally, the Differential Appitude Test was also included in the variable pool, but was removed from the analysis since only a very small number of subjects had taken this test. The 166 PTB variables included 8 measures of intellectual ability, 7 scales designed to reflect temperament, 15 work-attitude measures, one test of "foreign language ability" (AL), 38 vocational interest scales, and 97 biographical information scales. The CPI scales are designed for personality assessment. Appendix A contains brief descriptions of 31 critical variables used on a portion of the PTB, 18 CPI scales, and 38 vocational interest scales. These descriptions are provided for scales on which the greatest amount of general statistical relevance was obtained. They will be referenced extensively in the Results and Discussion section of this report. The remaining

97 PTB variables can be classified as items of biographical information. Any of these 97 items which significantly contributed to the interpretation of the relationships found in this study are discussed separately in the Results and Discussion section of this report and their descriptions appear in the last section of Appendix A.

Language Test Data

The 19 language variables included 6 scores on the Modern Language Aptitude Test (MLAT), 7 measures of prior language experience (ENTER, LANG1, PROF1, LANG2, PROF2, LANG3, PROF3), a measure of the number of hours in training (HOURS), an exit proficiency score (EXIT), an improvement score (IMPROVE: EXIT minus ENTER), and a measure reflecting type of language course studied (FT, PT-A, PT-B). Only speaking proficiency was recorded, since the 1974 report concluded that this aspect of language testing seemed to be the most objective and reliable of the various proficiency measures. A description of the MLAT is found in Appendix B and a description of the language proficiency rating system is found in Appendix C.

Biographical Measures

The six biographical measures which were recorded for each student but which are not considered part of the PTB are: identification number, year of birth, employee code, sex, educational level, and year of training. The first three were used to locate and classify data. The last three were used in the correlation matrices with the psychological and linguistic variables.

RESULTS AND DISCUSSION

This section is divided into three sub-sections: Sample Description, Identification of Factors Affecting Language Learning Success, and Prediction of Exit Speaking Proficiency and Improvement.

I. Sample Description

Table 1 found in Appendix D provides basic descriptive statistics derived from all of the available data obtained on each of the 209 measures. This information was also obtained separately: for each language; for part-time and full-time students within each language; for students with and without prior foreign language training; and for students with below average and above average MLAT total scores, so that appropriate training and population statistical comparisons could be made. Inspection of Table 1 shows that not every student had a score on every variable. Thus, when certain specific variables are examined, such as MLAT, prior language training, or any of the psychological scales, the available sample sizes are frequently found to be less than the maximum possible (1276).

Table 2 shows the number of students by language by type of training. The samples for German and Russian are notably smaller than for French and Spanish. Therefore, when further subdivided for analysis of particular factors, these samples were, in certain cases, insufficient to establish reliable bases for generalizations. These instances will be noted as they are discussed.

The total sample (see Tables 1 and 2) was subdivided into two groups -- an "MLAT" group consisting of individuals who had taken the MLAT (but who may or may not have taken the PTB), and a "PTB" group consisting of only those individuals who had taken the Professional Test Battery. Tables 3 and 4 provide sample sizes for these two sub-samples.

Throughout this report, various levels of statistical significance associated with specific findings will be cited. Whenever a finding is said to be "significant," it is assigned a precise probability of occurrence. For example, if the difference between the mean scores obtained by PT French students and PT Spanish students were discussed, three or more of those differences might be identified as being "statistically significant." i.e., MLAT, Hours in Training, Exit Proficiency. This simply means that the likelihood of such large differences occurring purely by chance is so low that the finding is attributed to real differences in the French and Spanish samples rather than to random sampling variations. Further, when it is said that significance was demonstrated at the "1% level," (.01) a specific probability value is attached to the result occurring by chance. Such a statement could be translated as follows: Differences as large as those actually obtained could not have occurred by chance alone any more than 1% of all the times such comparisons could be made. This study will cite primarily differences significant at the .01 or 1% level since an unmanageable number of correlations were found to be significant at the more generally accepted .05 or 5% level. Therefore, in general, any conclusions of statistical significance made throughout this report can be regarded as conservative.

Tables 5-8 represent correlational profiles on FT students enrolled in each of the four languages. Since full-time training is the prime concern of consumers and the LLC, and the number of available subjects in this category was the largest, full-time training will be treated more comprehensively than part-time training in this report.

A. Language Comparisons

Tables 9-14 compare mean scores obtained by FT students across languages. Scores on each of the 209 variables were compared and the differences significant at the 5% level are shown in these six tables. Correlation matrices for FT samples were compared, but the resulting number of significant differences was too unwieldy to display in this report. However, these matrices, showing the significant differences between correlation coefficients across languages are available from PSS.

Table 9 compares FT French and Spanish students. The data show that there was a greater percentage of women in the Spanish sample than in the French. French FT students have higher scores on the MLAT, and significantly higher entering proficiency (ENTER) than Spanish FT students. French students score higher on FM and IDY. They are also more willing to work in hazardous, annoying, irregular environments (WA02, WA04, WA15). French students had more prior training in French (BIO 66,77) and Spanish students had more prior training in Spanish (BIO 68,79) according to their PTB scores. French students also do more reading than Spanish students (BIO 95).

Table 10 compares FT French and German students. French students are younger and enter training with a higher entering proficiency (ENTER) than German students. French students are more willing to work in hazardous, physically demanding environments (WA02, WA09). German students have more prior training in German (BIO 67, 78) than do French students. German students enjoyed commerce and business subjects more (BIO 36, 45), and have vocational interests more similar to those of successful bankers (SV39) than do French students.

Table 11 compares FT French and Russian students. Russian students are younger and have less military experience (BIO 05) than French students. They have more prior training in Russian (BIO 69, 80) and German (BIO 78) than do French students. They also enter training with higher proficiency in the language studied than French students (ENTER). Russian students score higher on RC, AL, NO, and the MLAT.

Table 12 compares FT German and Spanish students. The data show a greater percentage of women in the Spanish student body, than in the German sample. Spanish students are younger than German students. German students have more prior training in German (BIO 67, 78) and Spanish students have more prior training in Spanish (BIO 68).

Table 13 compares FT Spanish and Russian students. Russian students enter training with higher entering scores, spend more time in training, and exit with higher scores than do Spanish students. They have higher scores on the MLAT, RC, AL, and NO than do the Spanish students. They have higher high school grades (BIO 19, 46, 48) than do the Spanish students, and enjoyed prior foreign language study more (BIO 39). They also have more Russian training (BIO 69, 80) than do Spanish students. The latter have more Spanish training (BIO 68) than do the Russian students. Finally, Russian students score lower on the CPI Dominance scale (DO).

Table 14 compares FT German and Russian students. Russian FT students entered training with higher entering proficiency and exited from training with higher exit scores than did German students. They had more prior training in Russian (BIO 69, 80), and liked foreign language study more than German students (BIO 39, 48). The Russian students were more willing to be trained (WA01), and more willing to work in a physically demanding (WA09) environment than the German students. Russian students are younger, and score higher on the MLAT and AL than German students. German students are more interested in commerce and business (BIO 36) than Russian students.

Certain generalizations regarding each of the four language samples can be made from these comparisons. French students have more military experience and are more willing to work in hazardous, physically demanding environments than students enrolled in the other three languages. Spanish students score the lowest of the three groups on the MLAT. The Spanish sample has the largest percentage of women. German students are the oldest group and, of the three groups, least enjoy working in hazardous, physically demanding environments. They are more interested in commerce and business than the other three student groups. Russian students are the youngest group. They enter training with higher scores on the MLAT and the ability measures, than students enrolled in the other three groups. They also enter training with higher entering proficiency (ENTER) in the language to be studied than any of the other three groups. French students have more prior training in French; German students have more prior training in German; Spanish students have more prior training in Spanish; and Russian students have more prior training in Russian.

These six table (9-14), present comparative data on FT students from that part of the total sample who had scores on the PTB measures. The statements describing these comparisons pertain to the students enrolled at the LLC in these four languages during FY67-74 and may not necessarily be applicable to future language students.

B. Training Comparisons

Tables 15-18 compare FT and PT students. Differences which are significant at the five percent level are shown. Since the sample sizes for PT-A and PT-B were too small by themselves, they were combined as PT students for the purposes of comparison with FT students. Looking at Tables 15-18, it is evident that in all four languages, there was a greater percentage of women in PT training than in FT training. The mean number of hours and mean exit scores for PT students were less than for FT students. There were no other generalizations applicable to all PT-FT comparisons.

Table 15 compares PT and FT French students. PT students scored significantly higher on MLAT part 5. PT students were also younger, had more prior training in French, and less military experience (BIO 05, 08) than did FT students. PT students were less willing to work in hazardous (WA02), supervised (WA10), isolated (WA11), or irregular (WA15) job environments than FT students.

FT students were in better health (BIO 09), had travelled more (BIO 03), had more dependents (BIO 58), wrote more technical reports (BIO 88), and had made more speeches (BIO 89) than PT students. FT students scored higher on FM and RC, but lower on CAT and AL than PT students. FT students' vocational interests are more similiar to those of successful engineers than are those of the PT students.

Table 16 compares PT and FT Spanish students. FT students have a higher proficiency in languages other than

Spanish, and score lower on the MLAT. They have more self-confidence (SC), tolerance (TO), and a greater desire to create a good impression (GI), than PT students. FT students have travelled more (BIO 03), made more speeches (BIO 89), and liked writing and composition (BIO 40, 112) more than PT students. PT students' vocational interests are more similar to those of successful mathematicians than are FT students'.

Table 17 compares FT and PT German students. FT students have more dependents than PT students (BIO 58). PT students' vocational interests are more similar to those of architects (SV03) and physicians (SV04) than are FT students'. Of all four language groups, German PT and FT students have the fewest significantly different mean scores on all variables.

Table 18 compares FT and PT Russian students. FT students are more willing than PT students to work in environments which require physical endurance and resourcefulness (WA 09, 13). They are more independent (AI) and enjoy reading mystery novels (BIO 98) more than PT students. FT students score higher than PT students on RC.

To summarize Tables 15-18, FT students seem to have broader interests than PT students. They have travelled more, made more speeches, enjoy more activities, and are more willing to work in unpleasant environments. PT students, however, score higher on the MLAT.

These Tables (15-18) give profiles on PT and FT students from that part of the sample of 1276 students who had taken the PTB. Statements describing these groups may not necessarily be applicable to future PT-FT comparisons.

C. Fast and Slow Comparisons

Tables 19-21 compare Fast and Slow learners. All subjects in these tables were FT students who entered training at S-0 or S-0.5. Table 19 compares students who attained only the S-1 level in less than 321 hours (FAST) to those students who attained only the S-1 level in more than 379 hours (SLOW). The subjects were students in all four languages.

Table 20 compares students in French, Spanish, and German who attained the S-2 level in less than 595 hours (FAST) to students in these three languages who attained the S-2 level in more than 725 hours (SLOW). There were not enough Russian students who entered training at S-0 or S-0.5 and attained S-2 to include in this sample.

Table 21 compares students in French, Spanish, and German who attained the S-3 level in less than 826 hours (FAST), to students in these three languages who attained S-3 in more than 825 hours (SLOW). There were not enough Russian students who entered training at S-0 or S-0.5 and attained S-3 to include in this sample.

The hours criteria defining FAST and SLOW learners in Tables 19-21, were determined through careful analysis of the complete full-time sample. These tables (19-31) will be discussed in the Results and Discussion section of this report under II-C (Hours in Training).

D. Prior Vs. No Prior Foreign Language Comparisons

Table 22 compares students who entered training at S-0 or S-0.5 in the language to be studied, and who had had no prior foreign language training in any other language at a measured proficiency of more than S-1.0 (NO PRIOR), against students who entered training at S-1.0 or more in the language to be studied, or who had a measured proficiency in any other language of S-1.5 or more (PRIOR).

These two groups of students will be discussed in Results and Discussion, II-A (Prior Language Training).

E. Below and Above Average MLAT

Table 23 compares students with Above Average MLAT total scores (65-80) to students with Below Average MLAT total scores (0-52) on all 209 variables. These two groups of students will be discussed in Results and Discussion, II-B (Measured Language Aptitude).

II. Identification of Factors Affecting Language Learning Success

Some foreign language students succeed, while other fail, given presumably identical course constraints, quality of instruction, and equal motivation. Students seem to absorb the presented material not only at differing rates, but also to varying qualitative degrees. Several factors which may account for this discrepancy are: prior foreign language experience, measured language aptitude, and psychological make-up of the individual.

A. Prior Foreign Language Training

The definitions of Prior and No Prior are presented on the previous page in Section I-D. Table 22 indicates that students with prior foreign language training (PRIOR), have significantly higher scores on several variables than do their peers without prior training (NO PRIOR):

- Linguistic Variables: ENTER, EXIT, MLAT, proficiency in other languages-PROF 1, PROF 2, PROF 3.
- Psychological Variables: RV, RC, CAT, AL, AP, IDY, CON. All of these are ability measures.
- Biographical Variables: Education Level, other BIO items.

The average number of hours in training for students with prior training is significantly less than for students without prior training (see Table 22). Table 24 presents the mean hours for FT students with and without prior training to attain

S-1 and S-2. This table shows a slight benefit for prior training at S-1 and a significant benefit at S-2.

B. Measured Language Aptitude

This section examines the effect that a student's language aptitude as measured by the MLAT total score, has on his: overall improvement, hours in training required to attain S-1, S-2, or S-3, and ultimate exit proficiency score.

Table 23 compares scores on all 209 variables for all PT and FT students with Below Average (0-52) and Above Average (65-80) language aptitude as measured by the MLAT total score. AA (Above Average) students entered with more prior language training, and exited in fewer hours with higher exit scores than BA (Below Average) students. AA students came from more educated homes (BIO 11), reported better work in high school and college (BIO 41, 44), graduated from high school younger (BIO 21), read more (BIO 95), and came from homes where English was the predominant language (BIO 18). AA students liked studying literature (BIO 32), foreign languages (BIO 39), and solving puzzles (BIO 113) more than BA students. AA students are less willing than BA students to work in job environments requiring security measures (WA 14). AA students have less self-control (SC) are more solitary (TTS6) and dislike physical activity (TTS2) more than

BA students. AA students received higher scores on the Ability Measures.

AA students have vocational interests more like physicians, authors, artists, psychologists, architects, mathematicians, while BA students have vocational interests more like policemen, carpenters, office men, purchasing agents, and farmers.

Tables 26-29 compare full-time students with Above and Below Average MLAT scores only on the linguistic measures. These categories are based on the MLAT criteria as defined in Appendix B. Each language is treated separately, since comparisons based on testing and training criteria are often more reliable intra-language than inter-language. Moreover, there was sufficient data for each language taken separately on which to perform these comparisons.

Table 26 presents the data for FT French students. As the numbers indicate, AA students have significantly higher entering scores, and more prior language training than BA students. Although the mean hours in training for these two groups does not differ significantly, the AA students completed training with significantly higher exit scores. This table indicates that French students with AA language aptitude complete training with higher exit scores in a similar amount of training time as students with BA language aptitude. Table 26 also suggests that there may be a relationship between prior language training and AA scores on the MLAT.

Table 27 compares data for FT Spanish students who have BA and AA MLAT scores. Here, as in the French samples, students with AA scores on the MLAT have significantly more prior training than do students with BA MLAT scores. The former's exit scores are significantly higher, but the number of hours in training is not significantly different for the two groups. This table adds support to the supposition stated above that there may be a positive relationship between prior language training and AA language aptitude test scores.

Tables 28-29 compare the data for FT German and FT Russian students, respectively, with BA and AA MLAT scores. Although the trend of mean scores on the variables HOURS, ENTER, EXIT, PROF1, PROF2, PROF3, is the same as in the French and Spanish groups, that is, students with AA MLAT scores complete training with higher exit scores and begin training with more prior language training than do BA students, these differences are not significant. However, the small sample sizes for German and Russian may account, in part, for these results.

Tables 30-33 compare PT students with AA and BA MLAT scores. Tables 30-31 present French and Spanish data, respectively. Students with AA MLAT scores significantly outperform students with BA MLAT scores. Their exit scores are significantly higher. They enter training with significantly more prior training. This trend is similar for the German and Russian PT students as Tables 32-33 indicate, although the differences are not statistically significant. This may be accounted for by virtue of small sample sizes in German and Russian as was the case for FT students in these languages.

A pattern emerges from these eight comparisons. Students with higher MLAT scores have more prior training and attain higher exit scores in similar training times than do their peers with BA MLAT scores.

Table 34 compares the mean number of hours required by BA and AA FT students to reach levels S-1, S-2, and S-3. BA French students take longer to reach levels S-1, S-2, and S-3 than do AA students. These differences are significant for levels S-1 and S-2, but not for S-3. Spanish AA students require less time in training than do BA students, but these differences are not significant at any exit proficiency level. There was insufficient data to make any Russian comparisons or to examine German samples beyond S-1. BA and AA German students take similar training times to attain S-1. Table 34 also shows that when data from French, Spanish and German are combined, the mean hours to attain S-1 and S-2 is significantly less for the AA students.

C. Hours in Training

The 1974 PSS study of LLC data concluded that the variable "hours in training" had a greater effect on a student's exit proficiency than any of the other available language measures. In the present study, psychological and biographical measures were added to the pool of language variables, and the relationship between hours in training and exit proficiency was reexamined. Fortunately, the larger data base provided by the LLC at this time permitted language by language (i.e., Spanish vs. German) comparisons rather than language group by language group comparisons (i.e., Romance vs. Slavic). Intra-language comparisons were also completed with this larger sample. There was sufficient data in most instances, to compare PT-HQ and PT-C of C samples, and to compare FT and combined PT samples.

Table 35 lists the mean number of hours FT and PT students spent in training in the four languages, in order to attain S-1, S-2, and S-3 proficiency. The number in parentheses beside each entry indicates sample size. These students all entered training with S-0 or S-0.5 proficiency in the language to be studied.

When these samples are compared across languages (Table 36) significant differences can be noted between FT French and Spanish students, and between FT Russian students and each of the other three FT samples. No significant differences were obtained in PT comparisons, using combined samples, as in Table 36. PT comparisons were also nonsignificant for PT-B groups across languages, and for PT-A groups across languages. Tables 36-38 show significance levels based upon comparison of the means reported in Table 35.

Table 37 presents intra-language comparisons. When PT and FT French students are compared, significant differences are found in the number of hours required for students to attain S-1 and S-2. PT training seems to be more effective than FT training for students with exit goals of S-1 and S-2. PT-B training and PT-A training do not differ significantly in the mean number of hours to attain S-1 and S-2.

For the Spanish samples, the results are similar to the French results described above, i.e., PT training is more effective than FT training. However, PT-A and B training show significant differences in the number of hours to attain S-1. PT-B training seems to be more effective than PT-A training in Spanish to attain S-1.

PT German training seems to be more effective than FT for students with S-1 goals. PT-A and PT-B German training do not differ significantly in the number of hours to attain S-1.

The data for Russian was limited. However, comparisons show that PT training to S-1 and to S-3 proficiency levels is more effective than FT training.

The 1974 study noted that certain students attained high exit proficiency scores in comparatively few hours, while others made very small proficiency gain after hundreds of hours in training. In order to investigate this difference in capacity for language learning, students were divided into SLOW and FAST learners as defined in Results and Discussion, I-C. Mean scores on all variables were compared for the two groups. Tables 19-21 present the significantly different mean scores on psychological, linguistic, and biographical variables for FAST and SLOW learners who attained S-1, S-2, and S-3.

Based on these exit goals, S-1, S-2, S-3, three profiles on the FAST student are presented. Certain characteristics pertain to two of the three groups, but the only characteristic common to all three groups of FAST learners is that there were significantly more women in the FAST groups than in the SLOW groups. Students in the FAST samples attaining S-1 and S-2 scored higher on the MLAT and on the AL than did the SLOW students. They also had more prior training in other languages than did SLOW students.

The FAST learner attaining S-1 enjoys physical activity less, has lower educational expectations, and reads fewer science books than the SLOW student. The FAST learner attaining S-2 has a higher capacity for status, went to a larger university, developed an interest in occupational goals earlier, and enjoys music, art, puzzle solving, and drawing more than the SLOW student.

The FAST learner attaining S-3 has a higher capacity for status, is more self-confident, and sees himself more as a leader in group situations than does the SLOW student. Amount of prior training and MLAT scores are lower for the FAST than for the SLOW student, although these differences are not significant. The FAST learner held jobs earlier, and made important personal decisions earlier than did the SLOW learner. His vocational interests are less like those of policemen, accountants, and officemen than the SLOW learner.

The LLC is especially interested in discovering what psychological characteristics students who attained S-3 possess. An S-3 level speaker is defined as one who demonstrates poise and confidence in speaking the foreign language, which the S-2 or S-2+ student has not yet received. Total Immersion (TI) programs were instituted several years ago to bring students up to an S-3 level and to give them the poise and confidence in speaking which are rarely acquired in the classroom. The data for FAST students who attain S-3 substantiate the hypothesis that confidence is indeed a characteristic of those who can attain S-3. Whether or not this quality in speaking can be taught, is still unknown. Do the total immersion programs bring out, or do they teach speaking confidence? A follow-up study should be undertaken examining files of LLC students with high ratings on psychological confidence scales. Students who have attended the TI programs and reached S-3 should be studied to determine whether confidence in speaking in intrinsic or taught.

Table 38 compares the number of hours intra-language to reach levels S-1, S-2, and S-3. Ideally, there would be a significant difference listed for each comparison made. This would mean that the number of hours required to attain each level is different. However, the figures show that this is not the case. There is no significant difference in the number of hours: for a PT Spanish student to reach S-1 or S-2; for PT and FT German students to reach S-2 or S-3;

for FT Russian students to reach S-1 or S-2; or for PT or FT Russian students to reach levels S-2 or S-3.

III. Prediction of Exit Speaking Proficiency and Overall Improvement

Two major techniques of predicting exit proficiency and overall improvement have been used in this analysis. The technique used to evaluate correlational data of the type shown in Tables 5-8, is called Multiple Regression Analysis. These tables show the magnitude and direction of the correlations between variables. The reported correlations between exit proficiency and other variables, and between overall improvement and other variables, express the extent to which exit scores and overall improvement can be predicted from any other single measure.

The multiple regression equation represents a way of predicting performance from the most mathematically optimal combination of the individual measures. Tables 39-41 show the equations which produce the best predictions of exit proficiency and improvement for FT French, Spanish, and German. There was not enough data on FT Russian students to generate a useful equation for that language. Based on the available data, the equations presented in Tables 39-41 represent the best prediction of exit proficiency and improvement using the selected predictor variables and the technique called multiple regression analysis.

Table 39, French, shows four equations. The heading above each equation indicates the group for whom the equation is applicable. The first two equations were generated for all students who have previous language experience. The last two equations can be used if the student has no prior language experience. The Prior/No Prior definitions are found in Section I-D of Results and Discussion.

Similarly, Tables 40 and 41 give the equations for Spanish and German, respectively.

Figures 1-20 represent predicted improvement or predicted exit proficiency based solely on the number of hours spent in training. These predictions were generated by using a technique called polynomial regression analysis. Polynomial regression is a statistical technique similar to multiple linear regression except that for polynomial regressions, all predictions are generated by combining the scores obtained on one variable with exponential powers of the same variable (in this case HOURS) in order to derive predicted values on a second variable (in this case Exit Proficiency/Improvement). This technique is used only when the relationship between two variables can be shown to be non-linear. Since the relationship between hours in training and exit proficiency was found to be non-linear, that is, more hours in training do not necessarily mean a proportionately higher exit score, polynomial regressions enable more accurate predictions to be made for exit proficiency and improvement (from the single variable, HOURS) than does linear regression. Polynomial regressions can only be used with one predictor and one predicted variable. As the figures show, exit proficiency and improvement are one and the same when students enter training with no prior proficiency (Enter = S-0.0/0.5). For students who enter training with S-1.0 or greater, predicted exit proficiency can be found for any number of hours by adding the number scaled from 0 to 7 on the vertical axis of Figures 1-20 to the entering score.

0 = S-0
1 = S-0 to S-0.5
2 = S-0 to S-1
3 = S-0 to S-1.5
4 = S-0 to S-2
5 = S-0 to S-2.5
6 = S-0 to S-3
7 = S-0 to S-3.5

These 20 figures can be used for prediction of a student's exit proficiency and improvement from knowledge of hours in training. For example, looking at Figure 5, FT French, Enter = 0.0/0.5, an average student who will be training 17 weeks, at 33 hours per week, or 561 hours, has a predicted improvement score of 3.787 or somewhere between S-1+ and S-2. These figures can be compared with Table 35 - Mean Hours to Attain

S-1, S-2, and S-3. The mean hours in training for a FT French student was approximately 650. Looking at Figure 5, after approximately 650 hours a student's predicted exit score is S-2.0. (=4.0 scaled score).

Several generalizations can be made for Figures 5-8. The number of hours in training before improvement begins to level off is high -- more than 800 hours or 24 weeks. This is the standard course length. Therefore, an average FT student continues to improve throughout the course, or until approximately 2.0-2.5 is reached. The figures also show that only a very small number of students attain more than S-2.5 in French, German, and Spanish.

Comparing Figures 5-8 with Figures 9-12, it is evident that students entering FT training at S-1.0 or more peak earlier, at approximately 650 hours, in French and Spanish. There is not enough data to evaluate the German and Russian samples.

Figures 13-20 show that PT students spend less time in training than FT students. While students entering PT training at S-0.0/0.5 continue to improve throughout their training, PT students entering at S-1.0 do not. In fact, some students who enter at S-1.0 or more may regress to a lower proficiency after 150 hours or more (see Figures 17, 18, 20).

SUMMARY

This study was designed: to develop a statistical data base which would include both language and psychological measures on former LLC students, appropriately formatted for use in future curriculum and proficiency testing validation studies; to examine the factors presumably affecting language learning success, such as prior foreign language experience, course constraints, vocational interests, measured language aptitude, and biographical information; and to compare French, Spanish, German and Russian training in terms of both student body and instructional effectiveness.

A centralized master file was developed, using 209 available measures on 1276 former LLC students in the four languages. This data base, located in PSS, and machine recorded, can be used by the LLC or other Agency components for future research on foreign language training. The psychological, linguistic, and biographical measures obtained on these students were statistically analyzed. The findings indicate that:

1. FT students enrolled in the four languages have significantly differing psychological and linguistic profiles. French students have more military experience and are more willing to work in hazardous and physically demanding environments than students enrolled in the other three languages.

Spanish students score the lowest of the four groups on the MLAT. The Spanish sample has the largest percentage of women of the four groups, German students are the oldest and least enjoy working in hazardous, physically demanding environments. They are more interested in commerce and business than the other three student groups. Russian students are the youngest group. They enter training with higher scores on the MLAT and the PTB Ability Measures than students in the other three groups. They also enter training with higher entering proficiency (ENTER) in the language to be studied than any of the other three groups. French students have more prior training in French, German students have more prior training in German, Spanish students have more prior training in Spanish and Russian students have more prior training in Russian.

2. PT and FT students in each of the four languages have significantly differing psychological and linguistic profiles. In all four languages, there was a greater percentage of women in PT training than in FT training. FT students seem to have broader interests than PT students. They have travelled more, made more speeches, enjoy more activities, and are more willing to work in unpleasant environments. PT students score higher on the MLAT. Complete PT and FT comparisons for each of

the four languages are found in the Results and Discussion section of this report.

3. PT training is more effective than FT training for exit goals of S-1 and S-2. For French, PT training is more effective than FT training for exit goals of S-1 and S-2. For Spanish, PT-B training is more effective than PT-A training for exit goals of S-1, but both PT-B and PT-A training are more effective than FT training for exit goals of S-1 and S-2. PT German training seems to be more effective than FT training for exit goals of S-1. The data for Russian was limited, but comparisons show that PT training to S-1 and S-3 is more effective than FT training.

4. The mean hours to attain S-1, S-2, and S-3 in FT Russian training is significantly greater than the mean hours to attain S-1, S-2, S-3 in the other three languages. The mean hours to attain S-2 in French is significantly greater than the mean hours to attain S-2 in Spanish.

5. The number of hours needed to attain S-1 and S-2 is significantly influenced by measured language aptitude. Students with AA MLAT scores attain S-1 and S-2 in significantly fewer hours than students with BA MLAT scores.

Students with AA MLAT scores entered with more prior language training, and exited in fewer hours with higher exit scores than BA students. AA students came from more educated homes, did better work in high school and college, graduated from high school younger, read more, and came from homes where English was the predominant language. AA students liked studying literature, foreign languages, and solving puzzles more than BA students. AA students are less willing to work in job environments requiring security measures. They have less self-control, are more solitary, and dislike physical activity more than BA students. AA students received higher scores on the Ability Measures. AA students have vocational interests more like those of successful physicians, authors, artists, psychologists, architects, and mathematicians, while BA students have vocational interests more like those of successful policemen, carpenters, officemen, purchasing agents, and farmers.

6. The number of hours needed to attain S-2 is significantly influenced by prior language training.

7. Each of the four languages requires a different combination of factors to optimize the prediction of exit proficiency and improvement. The most important psychological

and linguistic predictors for all four languages seem to be HOURS, MLAT-3, MLAT-4, prior language training, entering score, and biographical measures describing the individual's experience in and attitude toward foreign language study.

8. Based on exit goals of S-1, S-2, and S-3, profiles on the student who attains these goals more rapidly than the average student (FAST) or more slowly than the average student (SLOW), were developed. In all three groups, those who attained S-1, S-2, and S-3, the only characteristic common to all FAST learners is that there were significantly more women in the FAST groups than in the SLOW groups. Students in the FAST groups attaining S-1 and S-2 scored higher on the MLAT and on the AL than did the SLOW students. They had more prior training in other languages than did SLOW students. The FAST learner attaining S-3 has a greater desire to attain high status, is more self-confident, and sees himself more as a leader in group situations than does the SLOW student. He held jobs earlier, and made important personal decisions earlier in his life than did the SLOW learner.

It is anticipated that these research findings will provide the LLC and LLC consumers with useful guidelines for language training selection, and for post-training performance evaluation.

Recommendations For Further Study

1. More data should be gathered on Russian and German students, so that comprehensive analyses in these languages could be completed.

2. The prediction equations presented in Tables 39-41 should be validated on future student samples.

3. More data should be gathered on women students so that further sex comparisons in language learning ability can be made.

4. Record keeping at the LLC should be computerized to avoid duplication, error, and to simplify information retrieval.

5. Follow-up studies should be done on:

a) The predictive powers of MLAT-3 and MLAT-4 alone vs. all five parts of the MLAT. If two sections provide as much predictive information as five, then test time could be significantly reduced.

b) Differences between languages in differing language groups such as French and Spanish grouped as Romance, or Russian and Serbo-Croatian grouped as Slavic. Individual languages between any two such groups (i.e., French-Romance vs. Russian-Slavic), should be analyzed separately in order to isolate the effects of proficiency testing procedures, training procedures, and instructor variables. The language groups themselves (Romance vs. Slavic) should not be compared with each other.

c) The relationship between psychological measures of personal poise or confidence and the attainment of S-3 speaking proficiency. Data from FY69 forward should be used, since proficiency testing procedures were not as standardized prior to 1969.

d) PT courses. These seem to be more effective than FT training. Curricula and instructional methodology should be compared for PT and FT training, to determine the reasons for such differences.

e) Determining the reasons for obtained differences in mean training times to attain S-2 in French and Spanish, as well as differences in mean training times to attain S-1, S-2, and S-3 in Russian vs. the other three languages.

f) Determining the reasons for obtained similar training times to achieve S-2 and S-3 in German and Russian.

g) The relationship between AL and reading attainment. This study shows AL to be a poor predictor of language speaking aptitude when compared with the MLAT. However, it may prove to be useful as a predictor of language reading success. If subsequent research shows that AL correlates with neither speaking nor reading aptitude, it should not be regarded by Agency managers, as it presently is, to be a measure of "language learning ability."

h) The relationship between the specific prior language studied, for example, German as opposed to French -- and achievement. The study of French, for example, may inhibit or promote language learning facility in Spanish.

i) The validity of entering proficiency scores. Many students made no tested progress, or even regressed after several hundred hours of training.

j) Differences between students in TI (Total Immersion) programs who have and who have not attained S-3.

k) The correlation between MLAT and PTB ability measures. How predictable are MLAT scores from data obtained on the PTB?

l) Differences between student samples obtained from different CIA divisions.

APPENDIX A

PSYCHOLOGICAL MEASURES

PROFESSIONAL TEST BATTERY (PTB)

Ability Measures	Temperament Scales	Work Attitudes Scales
FM	QUICK	TRAINING
RV	PHYSICAL	HAZARDS
RC	OUTGOING	ANALYZE
CAT	PREDOMINANT	ANNOYANCES
AP	CONFIDENT	REWARDS
IDY	SOLITARY	SOC. RESPON.
CON	QUESTION	MECHANICAL
NO		SUPERVISOR
AL		PHYSICAL
		SUPERVISEE
		SOC. DEPRIV.
		UNDESIRABLE
		RESOURCEFUL
		SECURITY
		TEMPO

Aptitude/Ability Measures. These eight tests are predominantly measures of intellectual ability and/or aptitude. Higher scores indicate greater ability/aptitude.

Figure Matrices (FM). This test measures abstract/nonverbal reasoning ability.

Reading Comprehension (RC). This test measures ability to read and comprehend verbal text.

Vocabulary (RV). Verbal fluency as reflected by knowledge of vocabulary is measured by this test.

Arithmetic Reasoning (AP). Arithmetic reasoning and problem-solving ability are measured by this test.

Interpretation of Data (IDY). This test measures a person's ability to make the best and most logical interpretation of data presented in the form of charts and graphs.

Considerations (CON). This is a test of ideational fluency, or the ability to generate ideas rapidly.

Numerical Operations (NO). The ability to perform simple numerical operations (viz., addition, subtraction, multiplication, and division) is measured by this test.

Contemporary Affairs Test (CAT). This test measures a person's knowledge of contemporary events and world affairs.

Artificial Language (AL). This test was devised as a measure of an individual's ability to learn and master foreign languages.

Temperament Scales. The seven temperament scales described here measure various aspects of how a person perceives and describes himself. Higher scores indicate a greater tendency, preference for, or amount of the attribute described.

TTS1 (Quick Scale). This scale measures how fast an individual moves, works, and acts--in short, the level of activity he perceives in his own behavior.

TTS2 (Physical Scale). This scale measures the extent to which an individual likes, and engages in, vigorous physical activity.

TTS3 (Outgoing Scale). This scale measures how socially extroverted the individual perceives himself to be.

TTS4 (Predominant Scale). The extent to which the individual sees himself as the central figure or leader in group situations is measured by this scale.

TTS5 (Self-Confident Scale). This scale measures the extent to which the individual views himself as self-assured, confident, and calm in his personal behavior.

TTS6 (Solitary Scale). Social introversion and preference for solitary activities are measured by this scale.

TTS7 (Question Scale). This scale measures the extent to which the individual is uncommitted in describing himself, either because of uncertainty or unusual caution.

Work Attitude Scales. These fifteen scales measure an individual's attitudes toward various types of work environments. For all scales, lower scores generally indicate a greater willingness or preference to work in a job requiring the activity described.

WA01 (Training Scale). This scale measures an individual's willingness to work in a job which requires extensive training.

WA02 (Hazards Scale). An individual's willingness to work in a hazardous job which may expose him to physical danger is measured by this scale.

WA03 (Analyze Scale). This scale measures willingness to work in a job which requires the individual to analyze, evaluate, or manipulate other people.

WA04 (Annoyances Scale). This scale measures the individual's willingness to work in a job in which he is constantly subjected to personal annoyances which may cause physical discomfort or inconvenience.

WA05 (Reward Scale). This scale measures the individual's willingness to do without reward, recognition, or feedback for his work accomplishments.

WA06 (Social Responsibility Scale). This scale measures willingness to work in a job which requires the individual to perform social duties such as frequent entertaining.

WA07 (Mechanical Scale). This scale measures unwillingness to undertake an assignment requiring activities in the mechanical field (use of instruments or machines, adjusting and repairing equipment).

WA08 (Supervisor Scale). Willingness to work in a job which requires the individual to spend much time supervising others is measured by this scale.

WA09 (Physical Scale). This scale measures the individual's willingness to work in a job which requires physical strength, coordination, or endurance.

WA10 (Supervisee Scale). Willingness to work in a job in which the individual receives close supervision is measured by this scale.

WA11 (Social Deprivation Scale). This scale measures the individual's willingness to work in a job setting in which he is frequently isolated with little or no contact with other people.

WA12 (Undesirables Scale). This scale measures the individual's willingness to work in a job in which he must deal with people considered inefficient, unpleasant, unstable, of questionable character, or undesirable in some other respect.

WA13 (Resourcefulness Scale). This scale measures the individual's willingness to work in a job which requires resourcefulness, initiative, and adaptability.

WA14 (Security Scale). This scale measures the individual's willingness to work in a job with highly unusual and unconventional aspects which limit his personal freedom, such as working under cover or working under tight security restrictions.

WA15 (Tempo Scale). This scale measures willingness to work in a job which involves highly irregular and constantly changing work pace and schedule.

California Personality Inventory (CPI) Scales. Each of the 18 scales of the CPI is intended to cover one important facet of interpersonal psychology. The descriptions of these scales as listed below are taken from the Manual for the CPI, published by the Consulting Psychologists Press, Inc., Palo Alto, Cal.

DO (Dominance Scale). To assess factors of leadership ability, dominance, persistence, and social initiative.

CS (Capacity for Status Scale). To serve as an index of an individual's capacity for status (not his actual or achieved status). The scale attempts to measure the personal qualities and attributes which underlie and lead to status.

SY (Sociability Scale). To identify persons of outgoing, sociable, participative temperament.

SP (Social Presence Scale). To assess factors such as poise, spontaneity, and self-confidence in personal and social interaction.

SA (Self-Acceptance Scale). To assess factors such as sense of personal worth, self-acceptance, and capacity for independent thinking and action.

WB (Sense of Well-being Scale). To identify persons who minimize their worries and complaints, and are relatively free from self-doubt and disillusionment.

RE (Responsibility Scale). To identify persons of conscientious, responsible, and dependable disposition and temperament.

SO (Socialization Scale). To indicate the degree of social maturity, intergrity, and rectitude which the individual has attained.

SC (Self-Control Scale). To assess the degree and adequacy of self-regulation and self-control and freedom from impulsivity and self-centeredness.

TO (Tolerance Scale). To identify persons with permissive, accepting, and non-judgmental social beliefs and attitude.

GI (Good Impression Scale). To identify persons capable of creating a favorable impression, and who are concerned about how others react to them.

CM (Communality Scale). To indicate the degree to which an individual's reactions and responses correspond to the modal ("common") pattern established for the inventory.

AC (Achievement via Conformance Scale). To identify those factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior.

AI (Achievement via Independence Scale). To identify those factors of interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors.

IE (Intellectual Efficiency Scale). To indicate the degree of personal and intellectual efficiency which the individual has attained.

PY (Psychological-Mindedness Scale). To measure the degree to which the individual is interested in, and responsive to, the inner needs, motives, and experiences of others.

FX (Flexibility Scale). To indicate the degree of flexibility and adaptability of a person's thinking and social behavior.

FE (Femininity Scale). To assess the masculinity or femininity of interests. (High scores indicate more feminine interests, low scores more masculine:)

STRONG VOCATIONAL INTEREST SCALES (SV)

These 38 scales measure how similar one's interests are to the interests of people working in a wide variety of jobs. Higher scores indicate stronger similarity of interests, lower scores indicate dissimilarity of interests.

SV Scale	Scale Name
1	Artist
2	Psychologist
3	Architect
4	Physician
5	Dentist
6	Mathematician
7	Physicist
8	Engineer
9	Chemist
10	Production Manager
11	Farmer
12	Aviator
13	Carpenter
14	Math-Science Teacher
15	Policeman
16	Forestry Service
17	YMCA Physical Director
18	Personnel Director
19	City School Superintendent
20	Public Administrator
21	YMCA Secretary
22	Social Science Teacher
23	Minister
24	Musician
25	CPA Partner
26	Senior CPA
27	Accountant
28	Office Man
29	Purchasing Agent
30	Banker
31	Sales Manager
32	Real Estate Sales
33	Life Insurance Sales
34	Advertising Man
35	Lawyer
36	Author-Journalist
37	Pres. Mfg. Concern
38	Army Officer

BIOGRAPHICAL MEASURES

BIO 01. During most of my childhood I lived in

1. the country.
2. a town with a population of less than 5,000.
3. a town of 5,000 to 50,000 population.
4. a city of 50,000 to 200,000 population.
5. a city with a population greater than 200,000.

BIO 02. By the time I was 18 years old I had lived

1. all my life in the same neighborhood.
2. in two different neighborhoods.
3. in three or four different neighborhoods.
4. in five or six different neighborhoods.
5. in seven or more different neighborhoods.

BIO 03. The number of states I had lived in or travelled in by the time I was 15 years old was

1. one.
2. two or three.
3. four to six.
4. seven to ten.
5. eleven or more.

BIO 04. Since my 13th birthday I have lived or travelled in foreign countries (not including overseas military service for a total time of

1. none.
2. one or two months.
3. three or more months.

BIO 05. I have had the following military experience (for purposes of this item, include service during the Korean conflict as wartime experience):

0. no military experience.
1. some military experience.

BIO 07. My highest rank of military service has been:

1. no military service.
2. enlisted rating.
3. Non-commissioned officer.
4. Warrant officer.
5. 2nd Lieutenant (or equivalent).
6. 1st Lieutenant (or equivalent).
7. Army captain (or equivalent).
8. Major (or equivalent).
9. Lieutenant colonel (or equivalent).
10. Colonel (or equivalent) or higher.

BIO 08. I have been on active military duty for the following length of time:

1. none.
2. less than 1 year
3. 1 or more years, but less than 3 years.
4. 3 or more years.

BIO 09. During the past two years my health has generally been

1. poor.
2. fair.
3. good.
4. very good.
5. excellent.

BIO 10. In school, my father went as far as

1. attending grade school through grade 8 or less.
2. attending high school, but did not graduate.
3. graduating from high school.
4. attending college, but did not graduate.
5. graduating from college.

BIO 11. In school my mother went as far as

1. attending grade school through grade 8 or less
2. attending high school, but did not graduate.
3. graduating from high school.
4. attending college, but did not graduate.
5. graduating from college.

BIO 12. When I was 15 years of age, my

1. parents were not living together (separated, divorced, dead).
2. parents were living together.

BIO 13. The number of my brothers and sisters who were living in my home during most of my childhood was

1. none.
2. one.
3. two.
4. three.
5. four or more.

BIO 16. When I was a child my parents entertained other adults (other than relatives)

1. practically never.
2. seldom.
3. once in a while.
4. fairly frequently.
5. a great deal.

BIO 17. In my childhood home there

1. were five books, or fewer.
2. were not more than twenty-five or thirty books.
3. were about enough books to fill one bookcase.
4. were enough books to fill two or three bookcases.
5. was a whole library of books.

BIO 18. In my childhood home

1. my parents spoke only English.
2. my parents spoke English and at least one other language.
3. my parents spoke only their native language, which was not English.

BIO 19. With respect to grades in high school, I usually stood in the

1. lowest ten per cent.
2. lowest twenty-five per cent, but not in the lowest ten per cent.
3. middle fifty per cent.
4. highest twenty-five per cent, but not in the highest ten per cent.
5. highest ten per cent of my class.

BIO 20. While I was in high school my spending money came

1. I didn't have any spending money.
2. entirely or almost entirely from my family.
3. partly from my family and partly from my own earnings
4. entirely or almost entirely from my own earnings.
5. from some other source than the above.

BIO 21. At the time I graduated from high school my age was

1. I have not graduated from high school.
2. 16 or under.
3. 17 or 18.
4. 19 or over.

BIO 22. After graduating from high school, I went to work or was otherwise unable to begin college for the following period of time:

1. I have not graduated from high school.
2. no longer than a summer.
3. no longer than one school year.
4. no longer than two school years.
5. more than two school years.

BIO 23. In addition to the education I now have, the most education I ever expect to receive is

1. I do not plan any future education.
2. a diploma from high school.
3. a certificate or diploma from business or trade schoo
4. some college training, but not a bachelor's degree.
5. a bachelor's degree.
6. a master's degree.
7. a doctor's degree.
8. specialized training beyond the doctor's degree.

BIO 29. The number of undergraduate students enrolled in the college or university which I last attended as an undergraduate was

1. less than 1,000.
2. 1,000 to 3,000.
3. 3,000 to 10,000.
4. 10,000 or more.

BIO 32-40. For each college subject area listed below mark your answer sheet according to the following key:

1. I usually disliked these courses.
2. I neither liked nor disliked these courses.
3. I usually liked these courses.
4. I liked these courses very much.

BIO 32. Literature

BIO 33. Physical sciences

BIO 34. Biological sciences

BIO 35. Social sciences

BIO 36. Commerce and business

BIO 37. Mathematics

BIO 38. Engineering

BIO 39. Foreign languages

BIO 40. Writing and composition

BIO 41-49. For each college subject area listed below, I feel that my work (not necessarily my grades) can fairly be described as

1. poor.
2. fair.
3. good.
4. excellent.

BIO 41. Literature

BIO 42. Physical sciences

BIO 43. Biological sciences

BIO 44. Social sciences

BIO 45. Commerce and business

BIO 46. Mathematics

BIO 47. Engineering

BIO 48. Foreign languages

BIO 49. Writing and composition

BIO 50. As an undergraduate in college I changed my major subject

1. never.
2. once.
3. twice.
4. three or more times.

BIO 53. The porportion of my undergraduate college expenses which I earned myself (including tuition, room, board, clothing, books) is

1. none.
2. 25% or less.
3. 25% to 50%.
4. 50% or more.

BIO 54. With respect to grades in college, I usually stood in the

1. lowest ten per cent.
2. lowest twenty-five per cent, but not in the lowest ten per cent.
3. middle fifty per cent.
4. highest twenty-five per cent, but not in the highest ten per cent.
5. highest ten per cent of my class.

BIO 55. The age at which I first began to use my own judgment entirely when purchasing clothing was

1. 14 years old or younger.
2. 14-16.
3. 16-18.
4. 18-20.
5. after 20.

BIO 56. I became completely independent of anyone else for my financial support

1. when I was 17 years old or younger.
2. when I was between 17 and 20.
3. when I was between 20 and 24.
4. when I was 24 or older.

BIO 57. The amount of life insurance which I hold and on which I (not my parents or anyone else) pay premiums is

1. none.
2. less than $4,999.
3. $5,000 to $9,999.
4. $10,000 or more.

BIO 58. The number of people (not including myself) who are dependent on me for all or most of their support is

1. none.
2. one.
3. two or more.

BIO 60. By the age of 17 I had held (mark the first answer which applies)

1. no full-time or part-time jobs.
2. one or several part-time jobs from time to time.
3. a full-time job for a period as long as a summer vacation (2 months).
4. at least one full-time job for a year or more.

BIO 61. Up to the present time (not counting military service or summer vacations from school), the number of full-time jobs I have held is

1. none.
2. 1 or 2.
3. 3 or 4.
4. 5 or 6.
5. 7 or more.

BIO 62. My interest in my present occupation or occupational goal developed

1. when I was a small child.
2. during my early teens.
3. during my late teens.
4. after the age of 20.

BIO 63. With regard to the possibility of my applying for a position with the Government, my family is (or was)

1. unaware of it.
2. opposed to it.
3. indifferent to it.
4. somewhat in favor of it.
5. very much in favor of it.

BIO 66-73. & 76. For each foreign language listed below mark your answer sheet according to the following key:

1. I have no reading ability in this language.
2. I have only slight reading ability in this language.
3. My reading ability in this language is fair.
4. I can read it with considerable skill, but with less than native ability.
5. I can read the language about as well as the average educated native of that country.

BIO 66. French

BIO 67. German

BIO 68. Spanish

BIO 69. Russian

BIO 70. Italian

BIO 71. Japanese

BIO 72. Arabic

BIO 73. Chinese

BIO 76. At least one modern language not listed above.

BIO 77-84. & 87 For each foreign language listed below mark your answer sheet according to the following key:

1. I have no speaking ability in this language.
2. I have only slight speaking ability in this language.
3. My speaking ability in this language is fair.
4. I can speak it with some fluency, but with less than native ability.
5. I can speak this language about as fluently as the average educated native of that country.

BIO 77. French

BIO 78. German

BIO 79. Spanish

BIO 80. Russian

BIO 81. Italian

BIO 82. Japanese

BIO 83. Arabic

BIO 84. Chinese

BIO 87. At least one modern language not listed above.

BIO 88. I have written technical reports (other than school or college assignments)

1. at no time, and I doubt that I could do so successful
2. at no time, but I think I could do so successfully.
3. on one or two occasions.
4. on a number of occasions.
5. frequently.

BIO 89. So far as making a public speech is concerned, I have

1. never done it, and I doubt that I could do so successfully.
2. never done it, but I think that I could do so successfully.
3. done it once or twice.
4. done it a number of times.
5. frequently done it.

BIO 90. I have solicited contributions for a charitable or service organization.

1. never, and I doubt that I could do so successfully.
2. never, but I think that I could do so successfully.
3. once or twice
4. a number of times.
5. many times.

BIO 91. So far as arranging a club entertainment is concerned, I have

1. never done it, and I doubt that I could do so successfully.
2. never done it, but I think that I could do so successfully.
3. done it once or twice.
4. done it a number of times.
5. done it frequently.

BIO 92. The number of persons with whom I exchange letters more or less regularly, aside from relatives and business correspondents, is

1. none.
2. one or two.
3. three or four.
4. five of six.
5. seven or more.

BIO 93. During the past several years I have attended a public entertainment (play, movie, athletic contest, concert, etc

1. less than once a month.
2. once or twice a month.
3. about once a week.
4. about twice a week.
5. three times a week or oftener, on the average.

BIO 95. The amount of my free time that I spend reading (newspaper magazines, books) is, on the average

1. 30 minutes a day or less.
2. from 30 minutes to an hour a day.
3. one to two hours a day.
4. two to four hours a day.
5. four or more hours a day.

BIO 96-107. For each of the following types of books, mark your answer sheet according to the following key:

1. I dislike very much.
2. I usually dislike.
3. I neither like nor dislike.
4. I usually enjoy.
5. I enjoy very much.

BIO 96. Art

BIO 97. Humor

BIO 98. Mystery or detective novels

BIO 99. Science ficton

BIO 100. Travel

BIO 101. Historical novels

BIO 102. Biography

BIO 103. Political affairs

BIO 104. History

BIO 105. Religion

BIO 106. Books of poetry

BIO 107. Science

BIO 108-118. For each of the recreational activities listed below, mark your answer sheet according to the following key:

1. I do not participate in this activity.
2. I do not enjoy but participate from time to time.
3. I enjoy but spend very little time at it.
4. I enjoy and spend a fair amount of time at it.
5. I enjoy and spend a great deal of time at it.

BIO 108. Photography

BIO 109. Painting or drawing

BIO 110. Designing or building useful things

BIO 111. Collecting (stamps, coins, etc.)

BIO 112. Creative writing

BIO 113. Solving puzzles

BIO 114. Playing card games

BIO 115. Playing a musical instrument

BIO 116. Dancing
BIO 117. Watching sports events
BIO 118. Listening to music

APPENDIX B

MODERN LANGUAGE APTITUDE TEST (MLAT)

The Modern Language Aptitude Test (MLAT) developed by John B. Carroll and Stanley M. Sapon in 1958, as part of the Harvard Language Aptitude Project (1953-1958), has been used in its original form since 1959, when it became available in commercially published form from the Psychological Corporation, N.Y. There are two versions to the test: a sixty-minute, five-part test and the shorter, three-part, thirty-minute version. LLC students take the longer form before entering a training course. They receive a total score, and five scores for each of the five subtests. The authors claim the five parts are "relatively uncorrelated." The following is a description of the five parts of the MLAT.

Part I. Number Learning. Measures the ability to learn by ear; short-term auditory memory. The students are taught the names for certain numbers in a new language. They are then given some practice exercises consisting of writing the answer in numbers for the words they hear. Confirmation is given of the practice items and then the test itself is given. The only writing necessary on this test is the entries on the student answer sheet.

Part II. Phonetic Script. Measures the ability to associate sound and symbol, as well as aural discrimination. The student is taught a phonetic transcription by hearing samples and comparing them with written items on a sheet. After a number of practice items, he is then asked to choose between two transcriptions for a word spoken on the tape. The only writing necessary on this test is the entries on the student answer sheet.

Part III. Spelling Clues. Measures flexibility of set, the ability to look at language in a new way. This test is entirely written and highly speeded. The student is given an English word in an unconventional spelling approximating general pronunciation, e.g, luv (love). The student must then pick a synonym for "luv" from among five choices.

Part IV. Words in Sentences. Gives an insight into a student's knowledge of grammatical structure by testing his ability to understand the function of words and phrases in sentences. A sentence is presented with one word capitalized. Then, another sentence is given with several alternatives underlined. The candidate must then pick out the alternative that serves the same function in the second sentence as the capitalized word does in the first sentence --- subject, adjective, conjunction, etc.

Part V. Paired Associates. Measures short-term visual memory. The student studies a list of 24 words in an unfamiliar language and their English equivalents. Then, he is given a test which consists of one of the foreign words followed by five English choices from which he must select the correct one. All twenty-four words are covered, and all English choices come from the same list.

MLAT CRITERIA

	Test I	Test II	Test III	Test IV	Test V
Maximum Score	43	30	50	45	24
Superior	43	29	35-50	37-45	24
Above Average	40-42	27-28	28-34	32-36	22-23
Average	30-39	22-26	18-27	22-31	15-21
Below Average	21-29	18-21	11-17	16-21	9-14
Poor	0-20	0-17	0-10	0-15	0-8

Over-all raw score converted to index rating: (Total)

Superior	71-80
Above Average	65-70
Average	53-64
Below Average	44-52
Poor	0-43

Conversion Table for MLAT-Total Scores

Raw Total	Index Score	Raw Total	Index Score	Raw Total	Index Score
0-9	15	67-68	37	125-127	59
10-12	16	69-71	38	128-129	60
13-15	17	72-74	39	130-132	61
16-18	18	75-76	40	133-135	62
19-21	19	77-79	41	136-137	63
22-23	20	80-82	42	138-140	64
24-26	21	83-84	43	141-143	65
27-29	22	85-87	44	144-145	66
30-31	23	88-90	45	146-148	67
32-34	24	91-92	46	149-150	68
35-37	25	93-95	47	151-153	69
38-39	26	96-97	48	154-156	70
40-42	27	98-100	49	157-158	71
43-44	28	101-103	50	159-161	72
45-47	29	104-105	51	162-164	73
48-50	30	106-108	52	165-166	74
51-52	31	109-111	53	167-169	75
53-55	32	112-113	54	170-172	76
56-58	33	114-116	55	173-174	77
59-60	34	117-119	56	175-177	78
61-63	35	120-121	57	178-180	79
64-66	36	122-124	58	181-192	80

APPENDIX C

FOREIGN LANGUAGE PROFICIENCY TESTING

LANGUAGE PROFICIENCY RATINGS

Attached are the criteria which a CIA employee must satisfy in order to be rated at a particular proficiency level. The demonstrated (tested) ability of an individual to cope with the criteria for each level will be the determining factor in rating his proficiency. The levels described are based upon a relative scale of 0 through 5, where 0 reflects no practical proficiency and 5 equates with an educated native-born individual.

The rating scales described have been developed to provide a meaningful method of characterizing the desired language skills of CIA personnel. Unlike academic grades, which measure the achievement in mastering the content of a prescribed course, the ratings are based on the absolute criterion of the command of an educated native speaker of the language.

The definition of each proficiency level has been worded so as to be applicable to every language; obviously the amount of time and training required to reach a certain level will vary widely from language to language, as will the specific linguistic features of the language involved. With this reasoning, persons with a "3" (Intermediate) rating in both Chinese and French, for example, should have approximately equal linguistic competence in the two languages. In the upper levels, stress is placed on accuracy of structure, precision of vocabulary sufficient to be both acceptable and effective in dealings with the educated citizen of the foreign country, and cultural nuances, as well as fluency.

All ratings except the "5" level may be modified by a plus (+), indicating that proficiency substantially exceeds the minimum requirements for the level concerned but falls short of those for the next higher level.

S-1 = 1.0
S-1+ = 1.5
S-2 = 2.0
S-2+ = 2.5 etc.

SPEAKING PROFICIENCY DEFINITIONS

Level	An individual must be able to:
S-1 (Slight)	Satisfy minimum courtesy requirements, usually with frequent errors and with sharply limited vocabulary. Handle simple situations of daily life and travel, such as getting temporary lodging, asking and giving simple directions, ordering a plain mean, and making purchases. Pronounce the language at least well enough to be understood by a native speaker accustomed to dealing with foreigners. Understand simple questions and statements, allowing for slowed speech, repetition, or paraphrase.
S-2 (Elementary)	Satisfy routine social demands, such as formal introductions and casual conversations about current events, work, and autobiographical information. Converse confidently, if not with facility, with people he deals with in the course of daily activities. Use basic constructions accurately, with acceptable weaknesses in more complex structures and some deficiencies in vocabulary. Pronounce the language generally intelligibly, though occasionally producing misunderstood words or phrases. Get the gist of most conversations on general subjects which require no specialized knowledge.
S-3 (Intermediate)	Speak with sufficient structural accuracy and vocabulary to participate effectively in most formal and informal conversations in social, professional, and other daily situations. Respond in unfamiliar situations with reasonable ease, using a vocabulary broad enough so that he rarely has to grope for a word. Speak with good control of grammar, making occasional minor errors which do not interfere with communication. Pronounce the language with an accent which, though obviously foreign, is always understandable. Comprehend most of what is said at a normal conversational rate of speech.

Level	An individual must be able to:
S-4 (High)	Use the language fluently, idiomatically, and accurately in all non-technical situations, with extensive and precise vocabulary, nearly perfect grammar, and an accent closely approximating that of native-born speakers. Understand the content of all conversations and formal presentations within the range of his experience, missing only those further refinements mentioned in the "5" category.
S-5 (Native)	Use the language in a manner equivalent to that of an educated native-born speaker. Speak fluently and accurately in all practical and social situations, and freely and idiomatically in his special fields. His speech on all levels will be fully accepted in all of its features, including breadth of vocabulary, idioms, colloquialisms, and pertinent cultural references. Understand all non-technical conversations and formal presentations, as well as technical discourse in his field.

LANGUAGE PROFICIENCY RATINGS
(Oral - Aural Skills)

Examinee JOHN DOE

Language FRENCH

Examiner TEST PANEL - RATER 1

Test Number SAMPLE

Date

SCORES

SPEAKING

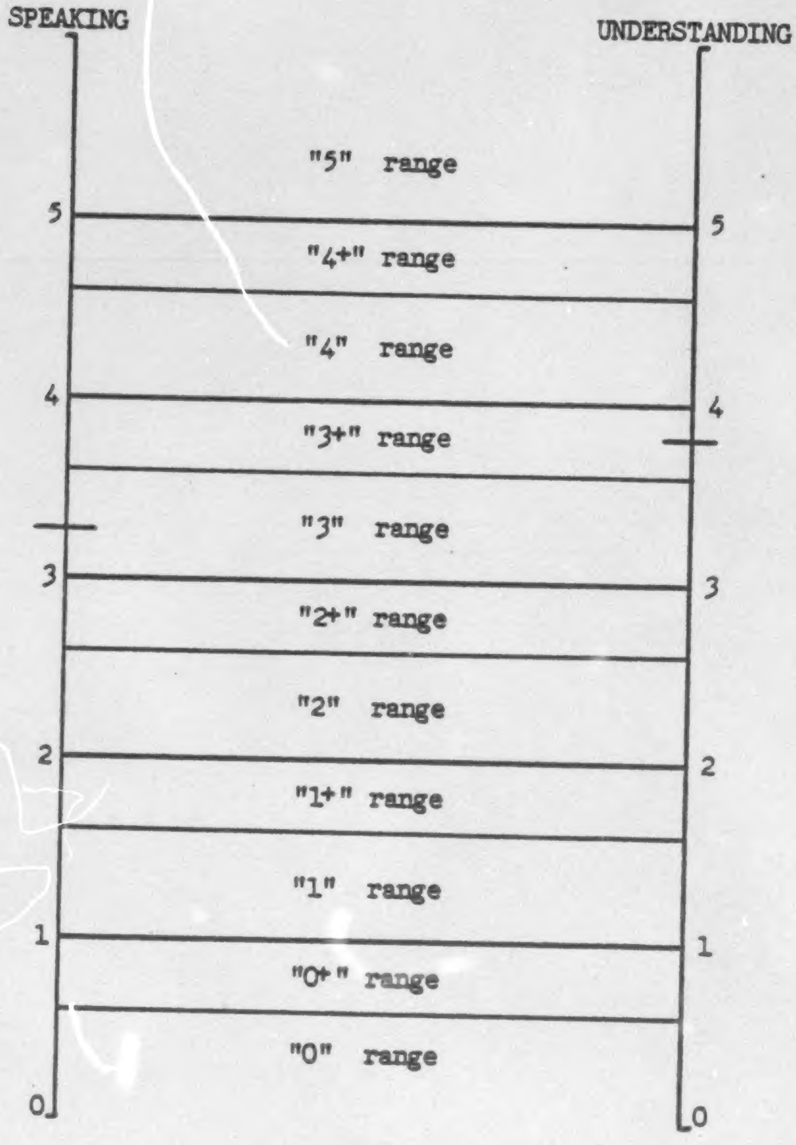
1.	3.0
2.	2.5
3.	
Total	

RATING 2.5

UNDERSTANDING

1.	3.5
2.	3.0
3.	
Total	

RATING 3.0


SPEAKING
UNDERSTANDING
"5" range
"4+" range
"4" range
"3+" range
"3" range
"2+" range
"2" range
"1+" range
"1" range
"0+" range
"0" range
5
4
3
2
1
0
5
4
3
2
1
0

REMARKS: Subject has nearly native pronunciation; makes frequent errors with complex structures.

LANGUAGE PROFICIENCY RATINGS
(Oral - Aural Skills)

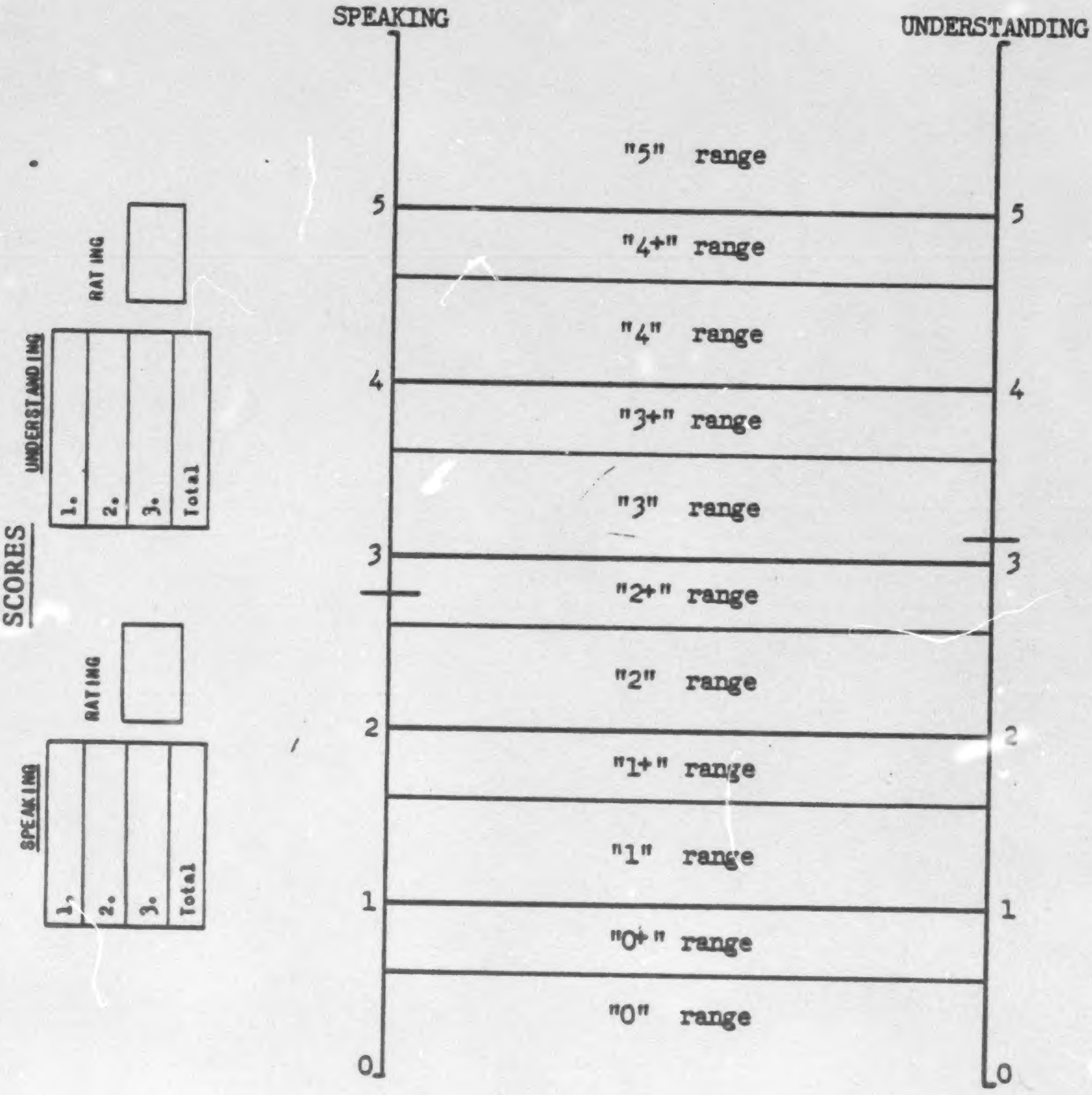
Examinee JOHN DOE

Language FRENCH

Examiner TEST PANEL- RATER 2

Test Number SAMPLE

Date


SPEAKING
UNDERSTANDING
"5" range
"4+" range
"4" range
"3+" range
"3" range
"2+" range
"2" range
"1+" range
"1" range
"0+" range
"0" range
5
4
3
2
1
0
SCORES
UNDERSTANDING
RATING
SPEAKING
1.
2.
3.
Total

REMARKS: Good control of prepositions.

APPENDIX D

TABLES AND FIGURES

TABLE 1

TOTAL SAMPLE DESCRIPTION

	LABEL	MEAN	S.D.	LOW	HIGH	GOOD.N
1	IDEN	639.183	368.869	1.000	1277.000	1276.000
2	LANG	1.752	0.905	1.000	4.000	1276.000
3	YR.OF.TRNG	71.563	2.004	67.000	74.000	1276.000
4	DIV	48.067	13.593	2.000	97.000	1276.000
5	TYPE	1.402	0.717	1.000	3.000	1276.000
6	SEX	1.316	0.465	1.000	2.000	1276.000
7	S.ENTER	6.971	9.853	0.0	45.000	1276.000
8	S.EXIT	19.314	8.603	0.0	45.000	1276.000
9	HOURS	364.161	298.390	1.000	1698.000	1276.000
10	LANG1	6.304	7.450	1.000	36.000	537.000
11	PROF1	20.408	12.174	0.0	50.000	537.000
12	LANG2	8.720	8.163	1.000	35.000	161.000
13	PROF2	21.770	13.868	5.000	50.000	161.000
14	LANG3	11.027	9.833	1.000	34.000	37.000
15	PROF3	23.514	14.331	5.000	50.000	37.000
16	YR.OF.BIRTH	37.185	9.791	0.0	55.000	1270.000
17	MLAT.TOTAL	58.636	9.570	22.000	86.000	1053.000
18	MLAT1	34.186	8.781	0.0	43.000	1053.000
19	MLAT2	24.585	4.074	8.000	30.000	1053.000
20	MLAT3	22.775	9.182	0.0	50.000	1053.000
21	MLAT4	26.315	7.690	0.0	44.000	1053.000
22	MLAT5	17.022	5.690	1.000	24.000	1053.000
23	IMPROVE	12.394	8.879	0.0	35.000	1276.000
24	PRIOR	0.508	0.500	0.0	1.000	1276.000
25	MLAT.RANGE	2.044	0.726	1.000	3.000	1053.000
26	ED.LEVEL	5.304	1.062	2.000	8.000	749.000
27	FH	5.069	1.954	0.0	9.000	742.000
28	RV	4.450	1.979	0.0	9.000	743.000
29	RC	4.974	2.168	0.0	9.000	743.000
30	CAT	4.554	1.909	0.0	9.000	597.000
31	AL	39.398	10.341	11.000	58.000	460.000
32	AP	5.182	1.962	0.0	9.000	637.000
33	IDY	4.504	1.919	0.0	9.000	738.000
34	CON	4.683	2.064	0.0	9.000	742.000
35	NO	4.356	1.924	0.0	9.000	741.000
36	WA01	3.515	1.703	0.0	9.000	745.000
37	WA02	2.843	1.879	0.0	9.000	745.000
38	WA03	3.549	2.014	0.0	9.000	745.000
39	WA04	3.319	1.979	0.0	9.000	745.000
40	WA05	3.795	2.076	0.0	9.000	745.000
41	WA06	3.579	2.010	0.0	9.000	745.000
42	WA07	3.777	1.865	0.0	9.000	745.000
43	WA08	4.133	1.921	0.0	9.000	745.000
44	WA09	3.228	1.900	0.0	9.000	745.000
45	WA10	3.686	1.692	0.0	9.000	745.000
46	WA11	3.497	1.808	0.0	9.000	745.000
47	WA12	3.803	1.932	0.0	9.000	745.000
48	WA13	4.064	1.996	0.0	9.000	745.000
49	WA14	4.161	1.982	0.0	9.000	719.000
50	WA15	3.636	1.977	0.0	9.000	745.000

TABLE 1 PAGE 2 of 4

	LABEL	MEAN	S.D.	LOW	HIGH	GOOD.N
51	TTS1	4.865	1.925	0.0	9.000	645.000
52	TTS2	5.548	1.955	0.0	9.000	644.000
53	TTS3	4.621	1.940	0.0	9.000	644.000
54	TTS4	5.084	2.011	0.0	9.000	644.000
55	TTS5	5.698	1.846	0.0	9.000	644.000
56	TTS6	4.437	1.906	0.0	9.000	504.000
57	TTS7	4.753	2.004	1.000	9.000	644.000
58	DC	34.067	4.826	22.000	43.000	165.000
59	CS	23.406	2.754	17.000	30.000	165.000
60	SY	29.055	3.922	17.000	47.000	165.000
61	SP	42.515	4.685	26.000	52.000	165.000
62	SA	24.339	2.645	18.000	29.000	165.000
63	WB	40.061	2.635	20.000	44.000	165.000
64	RE	31.085	3.526	22.000	40.000	165.000
65	SU	37.285	3.974	28.000	45.000	165.000
66	SC	32.163	5.458	18.000	44.000	165.000
67	TJ	26.230	3.177	17.000	32.000	165.000
68	GI	22.594	5.788	10.000	37.000	165.000
69	CH	25.594	2.066	11.000	28.000	165.000
70	AC	32.164	2.659	23.000	38.000	165.000
71	AI	23.545	3.295	16.000	31.000	165.000
72	LE	44.121	3.040	35.000	50.000	165.000
73	PY	14.412	2.144	9.000	19.000	165.000
74	FX	12.667	3.507	4.000	21.000	165.000
75	FE	16.030	3.942	9.000	27.000	165.000
76	BI001	3.631	1.181	1.000	5.000	586.000
77	BI002	2.853	1.358	1.000	5.000	587.000
78	BI003	2.852	1.406	1.000	5.000	586.000
79	BI004	2.085	0.900	1.000	3.000	586.000
80	BI005	0.817	0.487	0.0	1.000	587.000
81	BI007	2.872	2.147	1.000	8.000	586.000
82	BI008	2.445	1.317	1.000	4.000	586.000
83	BI009	4.738	0.522	1.000	5.000	587.000
84	BI010	3.308	1.454	1.000	5.000	542.000
85	BI011	3.254	1.220	1.000	5.000	575.000
86	BI012	1.035	0.372	1.000	2.000	587.000
87	BI013	2.088	1.183	1.000	5.000	587.000
88	BI016	3.286	0.892	1.000	5.000	587.000
89	BI017	3.693	0.978	1.000	5.000	587.000
90	BI018	1.139	0.418	1.000	3.000	586.000
91	BI019	4.012	0.896	1.000	5.000	587.000
92	BI020	2.969	0.734	1.000	4.000	587.000
93	BI021	2.973	0.324	1.000	4.000	506.000
94	BI022	2.418	1.003	1.000	5.000	586.000
95	BI023	5.937	1.672	1.000	8.000	585.000
96	BI029	2.832	0.999	1.000	4.000	570.000
97	BI032	3.501	0.783	1.000	4.000	538.000
98	BI033	2.559	0.935	1.000	4.000	435.000
99	BI034	2.720	0.948	1.000	4.000	357.000
100	BI035	3.528	0.718	1.000	4.000	549.000

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	LABEL	MEAN	S.D.	LOW	HIGH	GOOD.N
101	BI036	2.718	0.961	1.000	4.000	284.000
102	BI037	2.184	1.029	1.000	4.000	391.000
103	BI038	2.322	1.062	1.000	4.000	87.000
104	BI039	3.071	0.897	1.000	4.000	496.000
105	BI040	2.990	0.863	1.000	4.000	525.000
106	BI041	3.046	0.679	1.000	4.000	539.000
107	BI042	2.557	0.765	1.000	4.000	433.000
108	BI043	2.615	0.761	1.000	4.000	353.000
109	BI044	3.212	0.712	1.000	4.000	548.000
110	BI045	2.738	0.813	1.000	4.000	271.000
111	BI046	2.237	0.908	1.000	4.000	384.000
112	BI047	2.338	0.911	1.000	4.000	74.000
113	BI048	2.794	0.698	1.000	4.000	450.000
114	BI049	2.967	0.721	1.000	4.000	522.000
115	BI050	1.592	0.774	1.000	4.000	568.000
116	BI053	2.791	1.011	1.000	4.000	569.000
117	BI054	3.632	0.847	1.000	5.000	570.000
118	BI055	2.295	0.993	1.000	5.000	587.000
119	BI056	2.529	0.670	1.000	4.000	512.000
120	BI057	2.080	1.307	1.000	4.000	583.000
121	BI058	1.651	0.662	1.000	3.000	587.000
122	BI060	2.368	0.743	1.000	4.000	587.000
123	BI061	2.095	0.851	1.000	5.000	587.000
124	BI062	3.391	0.756	1.000	4.000	542.000
125	BI063	4.196	1.143	1.000	5.000	586.000
126	BI065	2.119	1.100	1.000	5.000	586.000
12[illegible]	BI067	1.606	0.943	1.000	5.000	586.000
1[illegible]	BI068	1.655	1.026	1.000	5.000	585.000
1[illegible]	BI069	1.361	0.762	1.000	5.000	584.000
130	BI070	1.198	0.547	1.000	5.000	585.000
131	BI071	1.041	0.230	1.000	3.000	585.000
132	BI072	1.027	0.247	1.000	4.000	585.000
133	BI073	1.056	0.363	1.000	5.000	585.000
134	BI076	1.269	0.661	1.000	5.000	584.000
135	BI077	1.643	0.947	1.000	4.000	585.000
136	BI078	1.330	0.862	1.000	4.000	585.000
137	BI079	1.670	0.955	1.000	5.000	584.000
138	BI080	1.276	0.726	1.000	4.000	584.000
139	BI081	1.139	0.490	1.000	5.000	584.000
140	BI082	1.020	0.354	1.000	4.000	584.000
141	BI083	1.038	0.285	1.000	4.000	583.000
142	BI084	1.060	0.373	1.000	5.000	582.000
143	BI087	1.216	0.693	1.000	5.000	580.000
144	BI088	2.799	1.135	1.000	5.000	586.000
145	BI089	3.326	1.049	1.000	5.000	584.000
146	BI090	2.910	0.915	1.000	5.000	586.000
147	BI091	3.020	1.011	1.000	5.000	586.000
148	BI092	2.817	1.211	1.000	5.000	586.000
149	BI093	2.532	0.891	1.000	5.000	585.000
150	BI095	2.024	0.920	1.000	5.000	586.000

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	LABEL	MEAN	S.D.	LOW	HIGH	GOOD
151	BI096	3.477	0.931	1.000	5.000	581.0
152	BI097	4.150	0.676	2.000	5.000	585.0
153	BI098	3.777	0.951	1.000	5.000	584.0
154	BI099	3.250	1.109	1.000	5.000	586.0
155	BI100	3.966	0.768	2.000	5.000	586.0
156	BI101	4.274	0.759	1.000	5.000	585.0
157	BI102	4.051	0.775	1.000	5.000	585.0
158	BI103	4.268	0.729	1.000	5.000	586.0
159	BI104	4.345	0.715	2.000	5.000	585.0
160	BI105	3.254	0.897	1.000	5.000	586.0
161	BI106	3.242	1.026	1.000	5.000	586.0
162	BI107	3.056	0.967	1.000	5.000	586.0
163	BI108	2.769	1.095	1.000	5.000	585.0
164	BI109	1.978	1.133	1.000	5.000	586.0
165	BI110	2.350	1.142	1.000	5.000	586.0
166	BI111	1.800	1.074	1.000	5.000	585.0
167	BI112	2.241	1.208	1.000	5.000	586.0
168	BI113	2.683	1.053	1.000	5.000	584.0
169	BI114	2.930	0.944	1.000	5.000	585.0
170	BI115	1.691	1.186	1.000	5.000	585.0
171	BI116	2.940	0.809	1.000	5.000	586.0
172	BI117	3.461	0.697	1.000	5.000	501.0
173	BI118	4.094	0.691	2.000	5.000	501.0
174	SVMALE01	4.734	1.232	4.000	9.000	470.0
175	SVMALE02	6.256	1.626	4.000	9.000	470.0
176	SVMALE03	4.619	1.304	4.000	9.000	470.0
177	SVMALE04	5.177	1.522	4.000	9.000	470.0
178	SVMALE05	4.664	1.156	4.000	9.000	470.0
179	SVMALE06	4.249	0.595	4.000	8.000	470.0
180	SVMALE07	4.153	0.571	4.000	8.000	470.0
181	SVMALE08	4.940	1.318	4.000	9.000	470.0
182	SVMALE09	5.034	1.453	4.000	9.000	470.0
183	SVMALE10	6.257	1.595	4.000	9.000	470.0
184	SVMALE11	5.066	1.462	4.000	9.000	470.0
185	SVMALE13	4.474	1.394	4.000	9.000	470.0
186	SVMALE14	5.938	1.620	4.000	9.000	470.0
187	SVMALE15	6.466	1.723	4.000	9.000	470.0
188	SVMALE16	5.396	1.617	4.000	9.000	470.0
189	SVMALE18	7.601	1.521	4.000	9.000	470.0
190	SVMALE19	6.209	1.590	4.000	9.000	470.0
191	SVMALE20	8.472	1.004	4.000	9.000	470.0
192	SVMALE21	6.296	1.643	4.000	9.000	470.0
193	SVMALE22	7.477	1.560	4.000	9.000	470.0
194	SVMALE23	5.677	1.599	4.000	9.000	470.0
195	SVMALE24	6.277	1.826	4.000	9.000	470.0
196	SVMALE25	5.852	1.549	4.000	9.000	465.0
197	SVMALE26	7.115	1.711	4.000	9.000	470.0
198	SVMALE27	6.011	1.680	4.000	9.000	470.0
199	SVMALE28	6.774	1.699	4.000	9.000	470.0
200	SVMALE29	5.669	1.486	4.000	9.000	470.0
201	SVMALE30	5.030	1.280	4.000	9.000	470.0
202	SVMALE31	6.523	1.791	4.000	9.000	470.0
203	SVMALE32	6.926	1.369	4.000	9.000	470.0
204	SVMALE33	6.626	1.574	4.000	9.000	470.0
205	SVMALE34	6.709	1.567	4.000	9.000	470.0
206	SVMALE35	6.609	1.723	4.000	9.000	470.0
207	SVMALE36	5.985	1.553	4.000	9.000	470.0
208	SVMALE37	5.353	1.330	4.000	9.000	470.0
209	SVMALE38	7.022	1.683	4.000	9.000	454.0

TABLE 2

Total Sample Sizes by Language by Type of Training

LANGUAGE	TOTAL	FT	PT	PT-B	PT-A
All Languages	1276	829	447	279	168
French	638	436	202	128	74
Spanish	399	292	107	70	37
German	157	77	80	30	50
Russian	82	24	58	51	7

FT - 33 hours per week

PT-B - 5 hours per week

PT-A - 6-9 hours per week

TABLE 3

Modern Language Aptitude Test Sample Sizes by Language by Type of Training

LANGUAGE	TOTAL	FT	PT	PT-B	PT-A
All Languages	1051	675	376	250	126
French	545	366	179	119	60
Spanish	331	238	93	68	25
German	114	50	64	30	34
Russian	61	21	40	33	7

FT - 33 hours per week

PT-B - 5 hours per week

PT-A - 6-9 hours per week

TABLE 4

Professional Test Battery (PTB) Sample Sizes by Language by Type of Training

LANGUAGE	TOTAL	FT	PT	PT-B	PT-A
All Languages	752	477	275	178	97
French	395	267	128	83	45
Spanish	206	145	61	44	17
German	91	47	44	15	29
Russian	60	18	42	36	6

FT - 33 hours per week

PT-B - 5 hours per week

PT-A - 6-9 hours per week

TABLE 5

Full-Time French Correlational* Profile

LABEL	YR .OF. TRNG	SEX	ED.L EVEL	H OURS	S.C NTLR	S. EXIT	IMP ROVE	P ROF1	P ROF2	ML AT.T OTAL	M LAT1	M LAT2	M LAT3	M LAT4	M LAT5	RV	RC	AL	LABEL
YR.OF.TRNG				-25	33		-27	23											YR.OF.TRNG
SEX				-21						23			20	26				25	SEX
ED.LEVEL														23		26	24		ED.LEVEL
HOURS					-29	34	58												HOURS
S.CNTCH						46	-70											21	S.CNTCH
S.EXIT							31			21		29							S.EXIT
IMPROVE																			IMPROVE
PROF1									47			23							PROF1
PROF2																			PROF2
MLAT.TOTAL											78	78	72	75	63	44	41	50	MLAT.TOTAL
MLAT1												39	27	37	38	20	21	27	MLAT1
MLAT2													46	49	33	26	28	45	MLAT2
MLAT3														37	23	47	31	37	MLAT3
MLAT4															40	35	38	61	MLAT4
MLAT5																	23	31	MLAT5
RV																	49	37	RV
RC																		38	RC
AL																			AL
TTS2																			TTS2
BI019																			BI019
BI016																			BI016
BI032																			BI032
BI036																			BI036
BI039																			BI039
BI041																			BI041
BI040																			BI040
BI064																			BI064
BI077																			BI077
BI109																			BI109
SVMALE02																			SVMALE02
SVMALE30																			SVMALE30
SVMALE34																			SVMALE34

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* The numbers in this table are correlation coefficients. They should be read as if they were preceeded by decimals. For example: -25 should be read as -0.25 and 70 should be read as +0.79, etc.

TABLE 5 (Continued) Page 2 of 2

LABEL	ITS2	B 1010	B 1018	B 1032	B 1036	B 1039	B 1041	B 1048	B 1066	B 1077	B 1104	SVMA LL02	SVMA LC30	SVMA LC34	LABEL
YR.OF.TRNG															YR.OF.TRNG
SEX	-22					22		26							SEX
ED.LEVEL		22										24	-24	31	ED.LEVEL
HOURS											20				HOURS
S.ENTER			25						30	30		22			S.ENTER
S.EXIT	-23		20					20	30	29					S.EXIT
IMPROVE															IMPROVE
PREF1						42									PREF1
PREF2															PREF2
MLAT.TOTAL	-25	30				28		22	27	33	-20				MLAT.TOTAL
PLAT1										20					PLAT1
PLAT2	-22	26				37		34	34	38	-22				PLAT2
PLAT3	-30									29					PLAT3
PLAT4		36				24			21						PLAT4
PLAT5															PLAT5
MV		33		30			31					30	-41	22	MV
MC		27		22			22					30	-36	24	MC
AL	-20	32		22				25	20			22			AL
ITS2														-32	ITS2
B1010									21						B1010
B1018															B1018
B1032							63					37	-39	31	B1032
B1036															B1036
B1039								70	30	30					B1039
B1041									20			27	-25	36	B1041
B1048									31	33					B1048
B1066										65				21	B1066
B1077															B1077
B1104															B1104
SVMALL02													-58	27	SVMALL02
SVMALC30														-29	SVMALC30
SVMALC34															SVMALC34

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TABLE 6

Full-Time Spanish Correlational*Profile

LABEL	YR.OF.TRNG	SEX	ED.LEVEL	HOURS	S.ENTER	S.EXIT	IMPROVE	MLAT.TOTAL	MLAT1	MLAT2	MLAT3	MLAT4	MLAT5	FM	MV	MC	AP	IOY	LABEL
YR.OF.TRNG					28		-29												YR.OF.TRNG
SEX																			SEX
ED.LEVEL						21		38		36	27	39		25	43	37	25	24	ED.LEVEL
HOURS					-30	28	62												HOURS
S.ENTER						44	-70												S.ENTER
S.EXIT							54	33		35	31	28			37	28			S.EXIT
IMPROVE																			IMPROVE
MLAT.TOTAL									79	76	75	79	68	45	53	48	49	37	MLAT.TOTAL
MLAT1										52	36	52	45	44		42	46	25	MLAT1
MLAT2											51	68	48		31	27	36		MLAT2
MLAT3												47	26	36	57	36	33	33	MLAT3
MLAT4													33	31	47	28	45	40	MLAT4
MLAT5														25	30	40			MLAT5
FM															33	49	54	33	FM
MV																55	42	37	MV
MC																	55	44	MC
AP																		44	AP
IOY																			IOY
WAIT																			WAIT
LL																			LL
B1013																			B1013
B1046																			B1046
B1060																			B1060
B1066																			B1066
B1077																			B1077
B1079																			B1079
B1095																			B1095
B1096																			B1096

* The numbers in this table are correlation coefficients. They should be read as if they were preceeded by decimals. For example: -25 should be read as -0.25 and 79 should be read as +0.79, etc.

TABLE 6 (Continued) Page 2 of 2

LABEL	WAIS	LE	BI013	BI046	BI066	BI068	BI077	BI079	BI095	BI096	LABEL
YR.OF.TRNG											YR.OF.TRNG
SEX										36	SEX
ED.LEVEL							25				ED.LEVEL
HOURS	-23			-32							HOURS
S.CATCH						29		35			S.CATCH
S.CRIT			-28		35	32	53	35	25	32	S.CRIT
IMPROVE	-22										IMPROVE
HLAT.TOTAL					36		37		20		HLAT.TOTAL
HLAT1											HLAT1
HLAT2					41		42				HLAT2
HLAT3					26		28		33		HLAT3
HLAT4					36		36				HLAT4
HLAT5					31		36				HLAT5
FM											FM
RV		56			41		36		36		RV
HC		58							25		HC
AP		49		51							AP
IOF									38		IOF
WAIS											WAIS
LE											LE
BI013					-32		-30				BI013
BI046											BI046
BI066							92			88	BI066
BI068								80			BI068
BI077										38	BI077
BI079										28	BI079
BI095											BI095
BI096											BI096

TABLE 7

Full-Time German Correlational* Profile

LABEL	TR.OF.TRNG	HOURS	S.C WTCH	S.EXIT	IMPROVE	B1010	B1040	B1071	B1074	B1082	B1094	B1106	B1112	SVMALE02	SVMALE23	SVMALE32	LABEL
TR.OF.TRNG			39		-46												TR.OF.TRNG
HOURS				42	45			49		49	45				-50	46	HOURS
S.C WTCH				34	-62												S.C WTCH
S.EXIT					49	52											S.EXIT
IMPROVE																	IMPROVE
B1010																	B1010
B1040												54	62	56			B1040
B1071										60	56						B1071
B1074																	B1074
B1082																	B1082
B1094																	B1094
B1106													51	53			B1106
B1112															61		B1112
SVMALE02															67		SVMALE02
SVMALE23																-47	SVMALE23
SVMALE32																	SVMALE32

* The numbers in this table are correlation coefficients. They should be read as if they were preceeded by decimals. For example: -25 should be read as -0.25 and 79 should be read as +0.79, etc.

TABLE 8

Full-Time Russian Correlational* Profile

LABEL	HOURS	S.ENTER	S.EXIT	IMPROVE	GO	CS	ST	SA	SO	GI	GI001	GI117	SVMALE06	SVMALE08	SVMALE13	SVMALE24	SVMALE25	LABEL
HOURS		-70	62	91		-97		-96	-98		-66							HOURS
S.ENTER				-85														S.ENTER
S.EXIT												88						S.EXIT
IMPROVE																		IMPROVE
GO																		GO
CS								97	100		97							CS
ST											97							ST
SA									98									SA
SO											97							SO
GI																		GI
GI001																		GI001
GI117																		GI117
SVMALE06																87		SVMALE06
SVMALE08															90			SVMALE08
SVMALE13																		SVMALE13
SVMALE24																		SVMALE24
SVMALE25																		SVMALE25

* The numbers in this table are correlation coefficients. They should be read as if they were preceeded by decimals. For example: -25 should be read as -0.25 and 79 should be read as +0.79, etc.

TABLE 9

FRENCH VS. SPANISH - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	535.261	436.000	900.716	292.000	0.0
2	DIV	44.603	436.000	47.058	292.000	0.008
3	SEX	1.206	436.000	1.318	292.000	0.001
4	S.ENTER	7.018	436.000	4.538	292.000	0.001
5	S.EXIT	21.491	436.000	20.000	292.000	0.012
6	HOURS	501.954	436.000	455.212	292.000	0.029
7	MLAT.TOTAL	59.123	366.000	55.966	238.000	0.000
8	MLAT1	34.601	366.000	32.567	238.000	0.008
9	MLAT2	24.033	366.000	23.660	238.000	0.001
10	MLAT3	23.705	366.000	21.235	238.000	0.001
11	MLAT4	26.552	366.000	23.954	238.000	0.000
12	FM	5.353	266.000	4.645	141.000	0.000
13	RC	5.169	266.000	4.634	142.000	0.017
14	IDY	4.689	264.000	3.965	143.000	0.000
15	WA02	2.408	267.000	2.924	145.000	0.004
16	WA04	2.918	267.000	3.434	145.000	0.007
17	WA09	2.873	267.000	3.283	145.000	0.030
18	WA11	3.150	267.000	3.503	145.000	0.047
19	WA15	3.135	267.000	3.690	145.000	0.005
20	CM	25.565	63.000	26.324	34.000	0.043
21	BI001	3.581	217.000	3.964	111.000	0.003
22	BI003	2.922	218.000	3.243	111.000	0.046
23	BI008	2.771	218.000	2.432	111.000	0.022
24	BI009	4.817	218.000	4.694	111.000	0.018
25	BI011	3.088	216.000	3.376	109.000	0.045
26	BI016	3.225	218.000	3.477	111.000	0.018
27	BI046	2.269	167.000	1.986	72.000	0.026
28	BI066	2.240	217.000	1.793	111.000	0.000
29	BI068	1.724	217.000	2.378	111.000	0.000
30	BI077	1.954	216.000	1.586	111.000	0.001
31	BI079	1.505	216.000	2.072	111.000	0.000
32	BI087	1.353	215.000	1.155	110.000	0.034
33	BI091	3.157	217.000	2.874	111.000	0.015
34	BI095	2.862	217.000	2.595	111.000	0.009
35	BI116	3.014	217.000	2.820	111.000	0.038
36	SVMALE02	6.480	196.000	5.963	109.000	0.008
37	SVMALE06	4.260	196.000	4.128	109.000	0.048

TABLE 10

FRENCH VS GERMAN - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	535.261	436.000	809.468	77.000	0.000
2	YR.OF.TRNG	70.924	436.000	70.390	77.000	0.033
3	S.ENTER	7.018	436.000	3.247	77.000	0.001
4	S.EXIT	21.491	436.000	19.545	77.000	0.035
5	LANG2	9.689	54.000	4.800	15.000	0.024
6	YR.OF.BIRTH	36.166	435.000	33.473	74.000	0.005
7	FR	5.353	266.000	4.783	46.000	0.045
8	WA02	2.408	267.000	3.196	46.000	0.005
9	WA04	2.918	267.000	3.543	46.000	0.031
10	WA09	2.873	267.000	3.761	46.000	0.002
11	WA11	3.150	267.000	3.761	46.000	0.026
12	WA15	3.135	267.000	3.891	46.000	0.017
13	BI036	2.635	104.000	3.333	18.000	0.004
14	BI045	2.571	98.000	3.222	18.000	0.004
15	BI067	1.491	218.000	2.364	33.000	0.000
16	BI072	1.954	216.000	1.545	33.000	0.020
17	BI078	1.587	217.000	2.242	33.000	0.000
18	SVMALE02	6.460	196.000	5.667	30.000	0.015
19	SVMALE03	4.862	196.000	4.333	30.000	0.029
20	SVMALE04	5.265	196.000	4.500	30.000	0.010
21	SVMALE05	4.760	196.000	4.267	30.000	0.017
22	SVMALE30	4.964	196.000	5.567	30.000	0.009

TABLE 11

FRENCH VS. RUSSIAN - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	ICEN	535.261	436.000	68.292	24.000	0.000
2	YR.OF.TRNG	70.924	436.000	72.292	24.000	0.001
3	S.ENTER	7.018	436.000	12.917	24.000	0.005
4	S.EXIT	21.491	436.000	25.625	24.000	0.009
5	HOURS	501.954	436.000	648.042	24.000	0.024
6	YR.OF.BIRTH	36.166	435.000	41.333	24.000	0.001
7	MLAT.TOTAL	59.123	366.000	63.762	21.000	0.031
8	MLATS	16.620	366.000	19.429	21.000	0.032
9	RV	4.564	266.000	5.647	17.000	0.027
10	RC	5.169	266.000	6.647	17.000	0.004
11	AL	32.955	177.000	44.429	14.000	0.000
12	CON	4.662	266.000	5.765	17.000	0.029
13	WO	4.211	265.000	5.647	17.000	0.002
14	WA01	3.449	267.000	2.588	17.000	0.033
15	DG	35.683	63.000	30.600	5.000	0.017
16	LE	43.651	63.000	46.800	5.000	0.025
17	BI005	0.729	218.000	0.375	16.000	0.003
18	BI007	3.239	218.000	1.875	16.000	0.015
19	BI008	2.771	218.000	1.938	16.000	0.012
20	BI011	3.088	216.000	3.938	16.000	0.008
21	BI019	3.950	218.000	4.436	16.000	0.034
22	BI020	3.055	218.000	2.688	16.000	0.042
23	BI037	2.207	169.000	3.000	9.000	0.025
24	BI039	2.994	179.000	3.625	16.000	0.007
25	BI046	2.269	167.000	2.889	9.000	0.048
26	BI048	2.662	176.000	3,313	16.000	0.010
27	BI057	3.041	218.000	2.375	16.000	0.042
28	BI063	4.046	217.000	4.813	16.000	0.014
29	BI067	1.491	218.000	2.063	16.000	0.018
30	BI069	1.180	217.000	2.375	16.000	0.000
31	BI070	1.327	217.000	2.000	16.000	0.003
32	BI080	1.162	216.000	2.313	16.000	0.000
33	BI093	3.764	216.000	4.250	16.000	0.044
34	BI117	3.419	191.000	2.833	12.000	0.021
35	SVMALE24	6.296	196.000	5.000	8.000	0.049
36	SVMALE30	4.964	196.000	4.125	8.000	0.031

TABLE 12

SPANISH VS GERMAN - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	900.716	292.000	809.468	77.000	0.000
2	YR.OF.TRNG	71.096	292.000	70.390	77.000	0.006
3	SEX	1.318	292.000	1.143	77.000	0.002
4	YR.OF.BIRTH	37.103	291.000	33.473	74.000	0.003
5	MLAT2	23.660	238.000	24.900	50.000	0.048
6	MLAT4	23.954	238.000	26.500	50.000	0.029
7	BI001	3.964	111.000	3.455	33.000	0.024
8	BI036	2.745	55.000	3.333	18.000	0.021
9	BI042	2.407	81.000	2.800	20.000	0.029
10	BI067	1.414	111.000	2.364	33.000	0.000
11	BI068	2.573	111.000	1.727	33.000	0.001
12	BI076	1.432	111.000	2.242	33.000	0.000
13	BI079	2.072	111.000	1.606	33.000	0.016
14	BI101	4.144	111.000	4.455	33.000	0.050
15	SVMALE04	5.073	109.000	4.500	30.000	0.039
16	SVMALE13	4.642	109.000	4.200	30.000	0.049

TABLE 13

SPANISH VS RUSSIAN - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	900.716	292.000	68.292	24.000	0.0
2	YR.OF.TRNG	71.096	292.000	72.292	24.000	0.005
3	S.ENTER	4.538	292.000	12.917	24.000	0.000
4	S.EXIT	20.000	292.000	25.625	24.000	0.002
5	HOURS	455.212	292.000	648.042	24.000	0.002
6	YR.OF.BIRTH	37.103	291.000	41.333	24.000	0.035
7	MLAT.TOTAL	55.566	238.000	63.762	21.000	0.000
8	MLAT1	32.567	238.000	38.333	21.000	0.006
9	MLAT2	23.660	238.000	26.286	21.000	0.004
10	MLAT4	23.954	238.000	29.238	21.000	0.003
11	MLAT5	16.273	238.000	19.429	21.000	0.014
12	FM	4.645	141.000	5.706	17.000	0.036
13	RV	4.176	142.000	5.647	17.000	0.010
14	RC	4.634	142.000	6.647	17.000	0.001
15	AL	31.649	86.000	44.429	14.000	0.000
16	IDY	3.965	143.000	4.941	17.000	0.039
17	CON	4.507	142.000	5.765	17.000	0.018
18	NO	4.225	142.000	5.647	17.000	0.008
19	WA01	3.559	145.000	2.588	17.000	0.033
20	WA02	2.924	145.000	2.000	17.000	0.040
21	WA09	3.283	145.000	2.176	17.000	0.028
22	DO	35.118	34.000	30.600	5.000	0.010
23	LE	44.324	34.000	46.800	5.000	0.041
24	BI005	0.658	111.000	0.375	16.000	0.031
25	BI019	3.793	111.000	4.438	16.000	0.008
26	BI037	2.062	73.000	3.000	9.000	0.015
27	BI039	2.989	94.000	3.625	16.000	0.009
28	BI046	1.986	72.000	2.889	9.000	0.004
29	BI048	2.668	93.000	3.313	16.000	0.004
30	BI058	1.820	111.000	1.313	16.000	0.035
31	BI063	4.144	111.000	4.813	16.000	0.024
32	BI067	1.414	111.000	2.063	16.000	0.004
33	BI068	2.378	111.000	1.563	16.000	0.004
34	BI069	1.180	111.000	2.375	16.000	0.000
35	BI077	1.506	111.000	2.125	16.000	0.034
36	BI078	1.432	111.000	2.000	16.000	0.012
37	BI079	2.072	111.000	1.375	16.000	0.011
38	BI080	1.153	111.000	2.313	16.000	0.000
39	BI098	3.703	111.000	4.250	16.000	0.034
40	BI101	4.144	111.000	4.625	16.000	0.027
41	BI117	3.480	102.000	2.833	12.000	0.028
42	SVMALE30	5.174	109.000	4.125	8.000	0.027

TABLE 14

GERMAN VS. RUSSIAN - FULL TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	809.468	77.000	68.292	24.000	0.000
2	YR.OF.TRNG	70.390	77.000	72.292	24.000	0.000
3	S.ENTER	3.247	77.000	12.917	24.000	0.000
4	S.EXIT	19.545	77.000	25.625	24.000	0.001
5	HOURS	457.792	77.000	648.042	24.000	0.032
6	YR.OF.BIRTH	33.473	74.000	41.333	24.000	0.000
7	MLAT.TOTAL	57.820	50.000	63.762	21.000	0.011
8	MLAT5	15.460	50.000	19.429	21.000	0.006
9	RV	4.478	46.000	5.647	17.000	0.024
10	AL	33.414	29.000	44.429	14.000	0.001
11	COM	4.457	46.000	5.765	17.000	0.040
12	NO	4.630	46.000	5.647	17.000	0.047
13	WA01	3.848	46.000	2.588	17.000	0.009
14	WA02	3.196	46.000	2.000	17.000	0.022
15	WA09	3.761	46.000	2.176	17.000	0.010
16	WA11	3.761	46.000	2.706	17.000	0.030
17	BI005	0.697	33.000	0.375	16.000	0.035
18	BI036	3.333	18.000	2.000	4.000	0.003
19	BI037	2.000	24.000	3.000	9.000	0.014
20	BI039	2.667	27.000	3.625	16.000	0.002
21	BI046	2.174	23.000	2.889	9.000	0.031
22	BI048	2.593	27.000	3.313	16.000	0.008
23	BI058	2.000	33.000	1.313	16.000	0.014
24	BI069	1.182	33.000	2.375	16.000	0.000
25	BI077	1.545	33.000	2.125	16.000	0.050
26	BI080	1.152	33.000	2.313	16.000	0.000
27	BI098	3.242	33.000	2.438	16.000	0.024
28	BI109	1.788	33.000	2.500	16.000	0.047
29	BI117	3.615	26.000	2.833	12.000	0.022
30	SVMALE24	6.267	30.000	5.000	8.000	0.049
31	SVMALE30	5.567	30.000	4.125	8.000	0.015

TABLE 15

FRENCH - FULL TIME VS PART TIME
SIGNIFICANT DIFFERENCES ONLY

LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
YR.OF.TRNG	70.924	436.000	72.520	202.000	0.000
DIV	44.003	436.000	49.726	202.000	0.000
TYPE	1.000	436.000	2.366	202.000	0.0
SEX	1.206	436.000	1.500	202.000	0.000
S.ENTER	7.018	436.000	9.802	202.000	0.001
S.EXIT	21.491	436.000	17.178	202.000	0.000
HOURS	501.950	436.000	144.752	202.000	0.0
YR.OF.BIRTH	36.166	435.000	39.178	202.000	0.000
MLATS	16.020	366.000	18.168	179.000	0.004
IMPROVE	14.472	436.000	7.525	202.000	0.000
FM	5.353	266.000	4.803	127.000	0.003
RC	5.169	266.000	4.701	127.000	0.041
CAT	4.378	222.000	4.804	107.000	0.047
AL	32.955	177.000	36.671	73.000	0.008
WA02	2.408	267.000	2.984	128.000	0.003
WA05	3.509	267.000	3.984	128.000	0.032
WA10	3.423	267.000	3.945	128.000	0.003
WA11	3.150	267.000	3.867	128.000	0.000
WA12	3.543	267.000	4.055	128.000	0.013
WA13	3.768	267.000	4.219	128.000	0.040
WA15	3.135	267.000	3.680	128.000	0.010
LTS2	5.571	238.000	5.026	116.000	0.018
BI003	2.922	218.000	2.448	105.000	0.004
BI004	2.055	217.000	2.286	105.000	0.029
BI005	0.729	218.000	0.419	105.000	0.000
BI007	3.239	215.000	2.410	105.000	0.001
BI008	2.771	218.000	1.990	104.000	0.009
BI009	4.517	218.000	4.648	105.000	0.007
BI019	3.950	218.000	4.238	105.000	0.006
BI020	3.055	218.000	2.838	105.000	0.012
BI022	2.505	218.000	2.257	105.000	0.038
BI035	3.441	204.000	3.629	97.000	0.037
BI038	2.587	46.000	1.714	7.000	0.039
BI040	2.602	176.000	3.000	84.000	0.011
BI053	2.907	214.000	2.530	100.000	0.002
BI057	3.041	218.000	2.721	104.000	0.039
BI058	1.725	218.000	1.448	105.000	0.006
BI060	2.491	218.000	2.181	105.000	0.009
BI063	4.046	217.000	4.381	105.000	0.015
BI066	2.240	217.000	2.533	105.000	0.027
BI072	1.018	217.000	1.105	105.000	0.027
BI076	1.296	216.000	1.057	105.000	0.003
BI083	1.023	215.000	1.124	105.000	0.019
BI087	1.353	215.000	1.057	105.000	0.001
BI088	2.912	217.000	2.543	105.000	0.007
BI089	3.719	217.000	3.476	105.000	0.041
BI092	2.719	217.000	3.086	105.000	0.010
BI096	3.405	215.000	3.657	105.000	0.026
BI107	3.157	217.000	2.800	105.000	0.003
BI108	2.903	216.000	2.619	105.000	0.028
BI110	2.535	217.000	2.133	105.000	0.003
SVMALE05	4.760	196.000	4.396	53.000	0.030
SVMALE06	5.031	196.000	4.472	53.000	0.003
SVMALE11	5.107	196.000	4.623	53.000	0.028
SVMALE15	6.602	196.000	5.962	53.000	0.017
SVMALE16	5.450	196.000	4.868	53.000	0.012
SVMALE21	6.184	196.000	6.774	53.000	0.019
SVMALE26	7.296	196.000	6.642	53.000	0.011
SVMALE30	7.297	192.000	6.560	50.000	0.012

TABLE 16

SPANISH FULL TIME VS PART TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	900.716	292.000	957.532	107.000	0.003
2	YR.OF.TRNG	71.096	292.000	71.991	107.000	0.000
3	DIV	47.658	292.000	51.280	107.000	0.005
4	TYPE	1.000	292.000	2.346	107.000	0.0
5	SEX	1.318	292.000	1.542	107.000	0.000
6	S.ENTER	4.538	292.000	7.944	107.000	0.001
7	S.EXIT	20.000	292.000	15.327	107.000	0.000
8	HOURS	455.212	292.000	114.411	107.000	0.000
9	MLAT.TOTAL	55.966	238.000	58.548	93.000	0.026
10	MLAT1	32.667	238.000	34.806	93.000	0.044
11	MLAT4	23.954	238.000	25.925	93.000	0.038
12	MLAT5	16.273	238.000	18.323	93.000	0.002
13	IMPROVE	15.462	292.000	7.430	107.000	0.000
14	WA09	3.263	145.000	3.947	57.000	0.028
15	WA15	3.690	145.000	4.509	57.000	0.005
16	ITS6	4.644	104.000	3.750	26.000	0.042
17	SA	24.676	34.000	23.100	10.000	0.046
18	SC	33.629	34.000	27.700	10.000	0.003
19	TO	26.588	34.000	23.100	10.000	0.001
20	GI	23.824	34.000	18.100	10.000	0.010
21	AC	32.471	34.000	29.900	10.000	0.024
22	LE	44.324	34.000	42.000	10.000	0.019
23	PY	14.588	34.000	12.600	10.000	0.022
24	BI005	3.243	111.000	2.485	33.000	0.006
25	BI029	2.689	100.000	3.290	31.000	0.039
26	BI040	3.158	101.000	2.500	28.000	0.001
27	BI046	1.986	72.000	2.533	15.000	0.029
28	BI089	3.476	111.000	2.970	33.000	0.002
29	BI112	2.243	111.000	1.576	33.000	0.003
30	SVMALE06	4.128	109.000	4.461	27.000	0.001

TABLE 17

GERMAN - FULL TIME VS PART TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	IDEN	809.468	77.000	551.313	80.000	0.000
2	YR.OF.TRNG	70.390	77.000	71.750	80.000	0.000
3	DIV	46.403	77.000	53.575	80.000	0.004
4	TYPE	1.000	77.000	2.625	80.000	0.0
5	SEX	1.143	77.000	1.337	80.000	0.004
6	S.ENTER	3.247	77.000	6.250	80.000	0.031
7	S.EXIT	19.645	77.000	14.938	80.000	0.001
8	HOURS	457.792	77.000	164.750	80.000	0.000
9	YR.OF.BIRTH	33.473	74.000	37.139	79.000	0.011
10	IMPROVE	16.299	77.000	6.688	80.000	0.000
11	AP	5.229	35.000	6.263	38.000	0.030
12	WA04	3.543	46.000	4.500	44.000	0.031
13	PY	15.273	11.000	13.600	10.000	0.017
14	BI002	3.242	33.000	2.441	34.000	0.023
15	BI039	2.667	27.000	3.226	31.000	0.037
16	BI057	3.121	33.000	2.441	34.000	0.044
17	BI058	2.000	33.000	1.441	34.000	0.010
18	BI061	2.273	33.000	1.824	34.000	0.034
19	BI062	3.367	30.000	3.033	30.000	0.021
20	BI090	2.758	33.000	3.324	34.000	0.020
21	BI097	3.970	33.000	4.324	34.000	0.041
22	BI105	3.455	33.000	2.971	34.000	0.031
23	SVMALE01	4.333	30.000	4.923	26.000	0.030
24	SVMALE03	4.333	30.000	5.154	26.000	0.005
25	SVMALE04	4.500	30.000	5.385	26.000	0.008
26	SVMALE06	4.100	30.000	4.577	26.000	0.017
27	SVMALE26	7.500	30.000	6.269	26.000	0.013

TABLE 18

RUSSIAN - FULL TIME VS PART TIME
SIGNIFICANT DIFFERENCES ONLY

	LABEL	MEAN..1	N.1	MEAN..2	N.2	SIGNIF..
1	YR.OF.TRNG	72.292	24.000	71.190	58.000	0.000
2	DIV	47.375	24.000	62.362	58.000	0.000
3	TYPE	1.000	24.000	2.121	58.000	0.000
4	S.EXIT	25.625	24.000	17.414	58.000	0.002
5	HOURS	648.042	24.000	128.103	58.000	0.000
6	IMPROVE	12.917	24.000	7.155	58.000	0.009
7	RC	6.647	17.000	4.950	40.000	0.005
8	WA02	2.000	17.000	3.293	41.000	0.029
9	WA05	2.176	17.000	4.000	41.000	0.005
10	WA13	3.118	17.000	[illegible].537	41.000	0.006
11	WA15	3.353	17.000	4.634	41.000	0.018
12	TU	27.800	5.000	22.000	5.000	0.043
13	AI	25.600	5.000	18.600	5.000	0.003
14	LE	46.800	5.000	42.000	5.000	0.049
15	PY	14.800	5.000	11.400	5.000	0.033
16	BI011	3.938	16.000	2.806	36.000	0.005
17	BI046	2.689	9.000	2.050	20.000	0.040
18	BI096	4.250	16.000	3.324	37.000	0.003
19	BI116	2.675	16.000	2.135	37.000	0.043
20	SVMALE13	4.625	8.000	4.048	21.000	0.030
21	SVMALE24	5.000	8.000	6.810	21.000	0.028

TABLE 19

FAST VS SLOW - S.EXIT OF 10-15 (S-1)
"ALL LANGUAGES"

	LABEL	FAST ....MEAN	N.1	SLOW ....MEAN	N.2	SIGNIF..
1	DIV	48.483	87.000	44.600	65.000	0.043
2	SEX	1.483	87.000	1.246	65.000	0.003
3	S.EXIT	11.839	87.000	13.462	65.000	0.000
4	HOURS	216.575	87.000	524.185	65.000	0.000
5	MLAT4	24.844	64.000	20.885	52.000	0.005
6	IMPROVE	11.839	87.000	13.462	65.000	0.000
7	TTS2	4.933	30.000	6.269	26.000	0.023
8	BI009	4.704	27.000	4.957	23.000	0.022
9	BI012	1.926	27.000	1.652	23.000	0.018
10	BI023	4.963	27.000	6.304	23.000	0.017
11	BI033	2.400	20.000	3.000	14.000	0.036
12	BI107	2.852	27.000	3.478	23.000	0.010

TABLE 20

FAST VS SLOW - S.EXIT OF 20-25 (S-2)
"ALL LANGUAGES"

	LABEL	FAST ....MEAN	N.1	SLOW ....MEAN	N.2	SIGNIF..
1	IDEN	740.913	126.000	617.209	86.000	0.008
2	LANG	1.675	126.000	1.395	86.000	0.005
3	SEX	1.206	126.000	1.081	86.000	0.014
4	HOURS	308.563	126.000	906.698	86.000	0.0
5	PROF1	21.333	60.000	14.730	37.000	0.010
6	MLAT2	25.326	92.000	23.264	72.000	0.001
7	AL	36.077	52.000	27.409	44.000	0.000
8	CS	23.647	17.000	21.923	13.000	0.033
9	SU	34.529	17.000	37.462	13.000	0.047
10	AC	31.118	17.000	33.615	13.000	0.040
11	BI010	3.410	61.000	2.808	52.000	0.045
12	BI029	2.935	62.000	2.549	51.000	0.032
13	BI034	2.949	39.000	2.407	27.000	0.032
14	BI039	3.393	56.000	2.550	40.000	0.000
15	BI042	2.745	47.000	2.361	42.000	0.023
16	BI043	2.795	39.000	2.429	26.000	0.046
17	BI046	2.929	56.000	2.128	39.000	0.000
18	BI050	1.726	62.000	1.373	51.000	0.012
19	BI062	3.208	59.000	3.652	46.000	0.021
20	BI068	2.286	63.000	1.615	52.000	0.001
21	BI079	2.048	62.000	1.462	52.000	0.002
22	BI096	3.694	62.000	3.196	51.000	0.004
23	BI109	2.226	62.000	1.769	52.000	0.046
24	BI113	2.935	62.000	2.327	52.000	0.002
25	BI115	2.177	62.000	1.500	52.000	0.002
26	SVMALE06	5.400	55.000	4.809	47.000	0.020
27	SVMALE30	4.727	55.000	5.170	47.000	0.048

TABLE 21

FAST VS SLOW - S.EXIT OF 30-35 (S-3) "ALL LANGUAGES"

	LABEL	FAST		SLOW		
		....MEAN	N.1	....MEAN	N.2	SIGNIF..
1	YR.OF.TRNG	69.408	49.000	71.000	28.000	0.000
2	HOURS	607.306	49.000	984.750	25.000	0.000
3	RC	6.172	29.000	4.875	16.000	0.043
4	AL	33.095	21.000	44.500	10.000	0.019
5	WA01	3.414	29.000	2.313	16.000	0.031
6	TTS4	5.231	26.000	3.813	16.000	0.048
7	TTS5	5.692	26.000	4.563	16.000	0.030
8	CS	23.300	10.000	26.000	2.000	0.007
9	BI003	3.167	24.000	4.618	11.000	0.001
10	BI011	3.087	23.000	3.909	11.000	0.045
11	BI040	3.571	21.000	3.000	6.000	0.030
12	BI055	2.667	24.000	1.545	11.000	0.002
13	BI060	2.500	24.000	1.636	11.000	0.003
14	BI062	3.583	24.000	2.625	8.000	0.004
15	BI070	1.042	24.000	1.818	11.000	0.004
16	BI071	1.000	24.000	1.182	11.000	0.040
17	BI080	1.125	24.000	1.636	11.000	0.040
18	BI099	2.958	24.000	4.273	11.000	0.002
19	BI111	1.583	24.000	2.545	11.000	0.043
20	BI112	2.667	24.000	1.727	11.000	0.045
21	BI115	1.917	24.000	2.818	11.000	0.035
22	BI118	3.952	21.000	4.636	11.000	0.033
23	SVMALE15	5.545	22.000	7.000	14.000	0.013
24	SVMALE27	5.364	22.000	6.571	14.000	0.025
25	SVMALE28	6.091	22.000	7.214	14.000	0.041

TABLE 22

PERSONS WITH NO PRIOR TRAINING
VS PERSONS WITH PRIOR TRAINING
SIGNIFICANT DIFFERENCES ONLY
"ALL LANGUAGES"

	LABEL	NO.PRIOR TRNG.MNS	N.1	PRIOR... TRNG.MNS	N.2	SIGNIF..
1	IDEN	605.555	628.000	613.819	648.000	0.013
2	YR.OF.TRNG	70.978	628.000	71.736	648.000	0.000
3	TYPE	1.408	628.000	1.554	648.000	0.000
4	SEX	1.361	628.000	1.272	648.000	0.001
5	S.ENTER	0.518	628.000	13.225	648.000	0.0
6	S.EXIT	15.430	628.000	23.079	648.000	0.0
7	HOURS	394.920	628.000	334.350	648.000	0.000
8	LANG1	4.512	127.000	6.859	410.000	0.002
9	PROF1	1.465	628.000	15.492	648.000	0.0
10	PROF2	0.207	628.000	5.208	648.000	0.000
11	PROF3	0.048	628.000	1.296	648.000	0.000
12	YR.OF.BIRTH	38.227	625.000	36.175	645.000	0.000
13	MLAT.TOTAL	55.778	499.000	61.211	554.000	0.000
14	MLAT1	32.873	499.000	35.549	554.000	0.000
15	MLAT2	23.377	499.000	25.673	554.000	0.000
16	MLAT3	20.681	499.000	24.661	554.000	0.000
17	MLAT4	24.277	499.000	28.152	554.000	0.000
18	MLAT5	16.311	499.000	17.662	554.000	0.000
19	IMPROVE	14.912	628.000	9.954	648.000	0.000
20	MLAT.RANGE	1.838	499.000	2.229	554.000	0.000
21	ED.LEVEL	5.652	328.000	5.922	421.000	0.001
22	RV	3.968	326.000	4.811	417.000	0.000
23	RC	4.318	326.000	5.331	417.000	0.000
24	CAT	4.365	271.000	4.712	326.000	0.027
25	AL	31.351	208.000	36.913	252.000	0.000
26	AP	4.969	287.000	5.357	350.000	0.014
27	IDY	4.290	324.000	4.671	414.000	0.007
28	CON	4.485	328.000	4.841	414.000	0.026
29	WA01	3.746	327.000	3.335	418.000	0.001
30	WA05	3.609	327.000	3.940	418.000	0.031
31	WA13	4.229	327.000	3.935	419.000	0.046
32	TTS7	4.962	291.000	4.581	353.000	0.016
33	BI001	3.517	271.000	3.730	315.000	0.029
34	BI004	1.937	271.000	2.213	315.000	0.000
35	BI010	3.059	255.000	3.530	287.000	0.000
36	BI011	3.098	265.000	3.387	310.000	0.005
37	BI016	3.129	271.000	3.421	316.000	0.000
38	BI017	3.517	271.000	3.845	316.000	0.000
39	BI019	3.878	271.000	4.127	316.000	0.001
40	BI021	3.004	270.000	2.946	316.000	0.033
41	BI032	3.202	248.000	3.386	290.000	0.006
42	BI036	2.827	150.000	2.597	134.000	0.045
43	BI039	2.795	210.000	3.273	286.000	0.000
44	BI040	2.924	250.000	3.069	275.000	0.033
45	BI041	2.960	250.000	3.121	289.000	0.006
46	BI044	3.121	248.000	3.287	300.000	0.007
47	BI046	2.560	207.000	2.965	283.000	0.002
48	BI049	2.915	248.000	3.051	274.000	0.032
49	BI053	2.865	261.000	2.711	308.000	0.041
50	BI060	2.454	271.000	2.332	316.000	0.048

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	LABEL	NO.PRIOR TRNG.MNS	N.1	PRIOR... TRNG.MNS	N.2	SIGNIF..
51	BI062	3.472	252.000	3.321	290.000	0.020
52	BI066	1.745	271.000	2.441	315.000	0.000
53	BI069	1.185	271.000	1.403	313.000	0.001
54	BI073	1.137	271.000	1.252	314.000	0.011
55	BI076	1.133	270.000	1.274	314.000	0.010
56	BI077	1.513	271.000	2.127	314.000	0.000
57	BI080	1.155	271.000	1.380	313.000	0.000
58	BI081	1.085	271.000	1.165	313.000	0.013
59	BI083	1.011	271.000	1.061	312.000	0.035
60	BI096	3.353	269.000	3.583	312.000	0.003
61	BI100	3.871	271.000	4.048	315.000	0.005
62	BI106	3.118	271.000	3.349	315.000	0.007
63	BI114	3.044	271.000	2.831	314.000	0.006
64	SVMALE01	4.577	215.000	4.867	255.000	0.011
65	SVMALE02	6.023	215.000	6.471	255.000	0.003
66	SVMALE04	5.014	215.000	5.314	255.000	0.034
67	SVMALE10	6.498	215.000	6.055	255.000	0.003
68	SVMALE11	5.293	215.000	4.875	255.000	0.002
69	SVMALE13	4.637	215.000	4.337	255.000	0.003
70	SVMALE15	6.707	215.000	6.263	255.000	0.005
71	SVMALE16	5.563	215.000	5.255	255.000	0.040
72	SVMALE23	7.572	215.000	6.898	255.000	0.003
73	SVMALE27	6.223	215.000	5.831	255.000	0.012
74	SVMALE28	7.019	215.000	6.569	255.000	0.004
75	SVMALE29	6.065	215.000	5.424	255.000	0.000
76	SVMALE30	5.298	215.000	4.804	255.000	0.000
77	SVMALE34	6.572	215.000	6.973	255.000	0.006
78	SVMALE35	6.572	215.000	7.008	255.000	0.008
79	SVMALE36	5.767	215.000	6.169	255.000	0.005

TABLE 23

ABOVE AVERAGE MLAT VS BELOW AVERAGE MLAT
SIGNIFICANT DIFFERENCES ONLY
"ALL LANGUAGES"

	LABEL	ABOVE .AVERAGE	N.1	BELOW .AVERAGE	N.2	SIGNIF..
1	IDEN	541.953	301.000	679.580	255.000	0.000
2	DIV	50.166	301.000	46.110	255.000	0.001
3	TYPE	1.551	301.000	1.404	255.000	0.014
4	S.ENTER	10.415	301.000	4.980	255.000	0.000
5	S.EXIT	22.093	301.000	15.922	255.000	0.003
6	HOURS	330.681	301.000	382.631	255.000	0.043
7	LANG1	5.971	173.000	8.790	62.000	0.012
8	YR.OF.BIRTH	38.691	301.000	36.502	255.000	0.003
9	MLAT.TOTAL	69.449	301.000	45.694	255.000	0.0
10	MLAT1	40.050	301.000	24.204	255.000	0.0
11	MLAT2	27.787	301.000	20.686	255.000	0.0
12	MLAT3	31.286	301.000	14.514	255.000	0.0
13	MLAT4	33.299	301.000	18.957	255.000	0.0
14	MLAT5	21.043	301.000	12.349	255.000	0.0
15	PRIOR	0.711	301.000	0.341	255.000	0.000
16	ED.LEVEL	5.981	211.000	5.323	127.000	0.000
17	FM	5.733	210.000	4.000	126.000	0.000
18	RV	5.368	209.000	2.937	126.000	0.000
19	RC	5.847	209.000	3.563	126.000	0.000
20	CAT	4.940	164.000	3.853	95.000	0.000
21	AL	40.711	142.000	25.170	53.000	0.000
22	AP	6.057	192.000	3.796	108.000	0.000
23	IDY	5.181	210.000	3.520	123.000	0.000
24	CON	4.781	210.000	4.278	126.000	0.026
25	NO	5.234	209.000	3.524	126.000	0.000
26	WA06	4.271	210.000	3.712	125.000	0.015
27	WA14	4.525	200.000	3.593	123.000	0.000
28	TTS2	4.995	193.000	5.509	106.000	0.030
29	TTS6	4.757	136.000	4.124	89.000	0.013
30	WB	39.745	47.000	41.556	18.000	0.039
31	SC	29.532	47.000	34.611	18.000	0.001
32	GI	20.511	47.000	24.500	18.000	0.033
33	AC	31.447	47.000	33.889	18.000	0.002
34	BI002	2.965	172.000	2.426	94.000	0.001
35	BI010	3.732	149.000	2.852	88.000	0.000
36	BI011	3.526	171.000	2.859	92.000	0.000
37	BI016	3.366	172.000	3.064	94.000	0.009
38	BI017	3.802	172.000	3.351	94.000	0.000
39	BI018	1.140	172.000	1.266	94.000	0.021
40	BI019	4.267	172.000	3.628	94.000	0.000
41	BI020	2.860	172.000	3.074	94.000	0.023
42	BI021	2.907	172.000	3.032	93.000	0.015
43	BI022	2.190	172.000	2.766	94.000	0.000
44	BI032	3.375	160.000	3.150	80.000	0.036
45	BI039	3.352	159.000	2.639	61.000	0.000
46	BI040	3.095	148.000	2.800	85.000	0.013
47	BI041	3.151	159.000	2.704	81.000	0.000
48	BI044	3.285	165.000	3.037	81.000	0.011
49	BI048	3.070	158.000	2.569	58.000	0.000
50	BI049	3.082	147.000	2.679	84.000	0.000

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	LABEL	ABOVE .AVERAGE	N.1	BELOW .AVERAGE	N.2	SIGNIF..
51	BI053	2.716	169.000	3.000	88.000	0.033
52	BI054	3.751	169.000	3.478	90.000	0.013
53	BI056	2.557	140.000	2.304	92.000	0.006
54	BI057	2.582	170.000	3.065	92.000	0.005
55	BI058	1.483	172.000	1.851	94.000	0.001
56	BI061	2.023	172.000	2.266	94.000	0.028
57	BI062	3.265	162.000	3.506	85.000	0.023
58	BI066	2.442	172.000	1.753	93.000	0.000
59	BI069	1.494	172.000	1.087	92.000	0.000
60	BI076	1.262	172.000	1.054	93.000	0.007
61	BI077	2.186	172.000	1.559	93.000	0.000
62	BI080	1.465	172.000	1.075	93.000	0.000
63	BI093	2.[illegible]22	172.000	2.351	94.000	0.019
64	BI095	3.000	172.000	2.649	94.000	0.003
65	BI113	2.337	172.000	2.462	93.000	0.005
66	BI115	2.228	171.000	1.745	94.000	0.003
67	BI118	4.219	137.000	3.988	81.000	0.020
68	SVMALE01	5.009	111.000	4.416	77.000	0.002
69	SVMALE02	6.685	111.000	5.922	77.000	0.001
70	SVMALE03	5.036	111.000	4.571	77.000	0.022
71	SVMALE04	5.423	111.000	4.922	77.000	0.037
72	SVMALE06	4.360	111.000	4.143	77.000	0.021
73	SVMALE10	5.937	111.000	6.416	77.000	0.038
74	SVMALE11	4.784	111.000	5.312	77.000	0.013
75	SVMALE13	4.279	111.000	4.649	77.000	0.017
76	SVMALE15	6.207	111.000	6.792	77.000	0.020
77	SVMALE27	5.838	111.000	6.390	77.000	0.028
78	SVMALE28	6.532	111.000	7.130	77.000	0.024
79	SVMALE29	5.342	111.000	6.065	77.000	0.001
0	SVMALE30	4.847	111.000	5.442	77.000	0.001
1	SVMALE34	7.117	111.000	6.429	77.000	0.002
2	SVMALE35	7.090	111.000	6.584	77.000	0.047
3	SVMALE36	6.288	111.000	5.623	77.000	0.005

TABLE 24

Prior vs. No Prior Training
Mean Hours to Attain S-1 and S-2
For all Languages - Full Time Students

	S-1	S-2
Prior	324.36(25)	537.19(74)
No Prior	354.59(162)	649.23(197)
Significance	NS	.01

(N) = Sample Size
NS = Not Significant

TABLE 25

Entering Score (FT students only)
Mean Hours to Attain S-2, S-3

	S-2	S-3
Enter = 0.0/0.5	618.638(271)	776.480(81)
Enter = 1.0	458.961(26)	871.800(10)
Significance	.01	NS

(N) = Sample Size
NS = Not Significant

TABLE 26

FRENCH FULL TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ... MEAN	N.1	BELOW.AV ... MEAN	N.2	SIGNIF
1	PRIOR	0.426	61.000	0.145	55.000	0.001
2	S.ENTER	10.714	119.000	6.566	83.000	0.006
3	S.EXIT	24.118	119.000	18.554	83.000	0.0
4	MLAT.TOTAL	69.067	119.000	45.217	83.000	0.0
5	MLAT1	40.160	119.000	24.072	83.000	0.0
6	MLAT2	27.992	119.000	20.410	83.000	0.0
7	MLAT3	31.210	119.000	14.988	83.000	0.0
8	MLAT4	32.622	119.000	18.699	83.000	0.0
9	MLAT5	20.487	119.000	11.120	83.000	0.0

TABLE 27

SPANISH FULL TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ... MEAN	N.1	BELOW.AV ... MEAN	N.2	SIGNIF
1	PRIOR	0.235	17.000	0.062	65.000	0.035
2	S.ENTER	7.875	40.000	3.476	82.000	0.008
3	S.EXIT	23.375	40.000	16.098	82.000	0.0
4	MLAT.TOTAL	68.900	40.000	45.427	82.000	0.0
5	MLAT1	39.975	40.000	23.744	82.000	0.0
6	MLAT2	27.650	40.000	20.500	82.000	0.0
7	MLAT3	31.300	40.000	14.402	82.000	0.0
8	MLAT4	31.650	40.000	18.329	82.000	0.0
9	MLAT5	21.275	40.000	12.805	82.000	0.0

TABLE 28

GERMAN FULL TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ... MEAN	N.1	BELOW.AV ... MEAN	N.2	SIGNIF
1	MLAT.TOTAL	70.429	7.000	46.000	11.000	0.0
2	MLAT1	41.286	7.000	23.818	11.000	0.0
3	MLAT2	27.143	7.000	22.000	11.000	0.020
4	MLAT3	33.000	7.000	14.182	11.000	0.0
5	MLAT4	34.143	7.000	20.000	11.000	0.0
6	MLAT5	20.714	7.000	11.273	11.000	0.0

TABLE 29

RUSSIAN FULL TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ....MEAN	N.1	BELOW.AV ....MEAN	N.2	SIGNIF..
1	MLAT.TOTAL	69.818	11.000	43.500	2.000	0.000
2	MLAT2	27.273	11.000	19.500	2.000	0.011
3	MLAT3	30.182	11.000	10.000	2.000	0.002
4	MLAT4	35.091	11.000	14.500	2.000	0.000
5	MLAT5	22.545	11.000	9.000	2.000	0.000

TABLE 30

FRENCH PART TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ... MEAN	N.1	BELOW.AV ... MEAN	N.2	SIGNIF
1	PRIOR	0.571	21.000	0.160	25.000	0.003
2	S.ENTER	12.037	54.000	7.195	41.000	0.011
3	S.EXIT	19.815	54.000	14.146	41.000	0.0
4	PROF1	19.375	32.000	30.500	10.000	0.010
5	MLAT.TOTAL	69.722	54.000	46.219	41.000	0.0
6	MLAT1	40.222	54.000	23.854	41.000	0.0
7	MLAT2	27.537	54.000	21.098	41.000	0.0
8	MLAT3	30.741	54.000	14.415	41.000	0.0
9	MLAT4	33.870	54.000	19.805	41.000	0.0
10	MLAT5	21.796	54.000	13.780	41.000	0.0

TABLE 31

SPANISH PART TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ... MEAN	N.1	BELOW.AV ... MEAN	N.2	SIGNIF
1	PRIOR	0.500	8.000	0.056	18.000	0.009
2	S.ENTER	11.154	26.000	2.368	19.000	0.005
3	S.EXIT	20.385	26.000	9.737	19.000	0.0
4	MLAT.TOTAL	69.577	26.000	47.105	19.000	0.0
5	MLAT1	40.269	26.000	25.368	19.000	0.0
6	MLAT2	26.654	26.000	20.684	19.000	0.0
7	MLAT3	31.000	26.000	15.474	19.000	0.0
8	MLAT4	34.577	26.000	19.895	19.000	0.0
9	MLAT5	21.615	26.000	13.053	19.000	0.0

TABLE 32

GERMAN PART TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ....MEAN	N.1	BELOW.AV ....MEAN	N.2	SIGNIF..
1	MLAT.TOTAL	71.095	21.000	46.231	13.000	0.000
2	MLAT1	40.048	21.000	26.846	13.000	0.000
3	MLAT2	28.333	21.000	20.769	13.000	0.000
4	MLAT3	32.190	21.000	12.231	13.000	0.000
5	MLAT4	35.524	21.000	19.077	13.000	0.000
6	MLAT5	21.571	21.000	13.077	13.000	0.000

TABLE 33

RUSSIAN PART TIME - ABOVE AVERAGE VS. BELOW AVERAGE - MLAT TOTAL

	LABEL	ABOVE.AV ....MEAN	N.1	BELOW.AV ....MEAN	N.2	SIGNIF..
1	YR.OF.TRNG	71.522	23.000	70.250	4.000	0.011
2	MLAT.TOTAL	69.609	23.000	47.500	4.000	0.000
3	MLAT1	38.913	23.000	23.250	4.000	0.000
4	MLAT2	28.753	23.000	22.750	4.000	0.001
5	MLAT3	32.435	23.000	14.000	4.000	0.000
6	MLAT4	33.739	23.000	23.000	4.000	0.004
7	MLAT5	20.000	23.000	12.750	4.000	0.005

TABLE 34

Below Average Vs Above Average - Mean Hours to Attain S-1, S-2, S-3

Full Time		**S-1**	**S-2**	**S-3**
FRENCH				
	BA	394.238(21)	728.304(23)	1019.000(2)
	AA	247.625(16)	572.896(29)	727.333(12)
Significance		.01	.01	NS

Full Time		**S-1**	**S-2**	**S-3**
SPANISH				
	BA	391.472(36)	639.937(16)	550.000(5)
	AA	252.000(2)	477.579(19)	1029.667(3)
Significance		NS	NS	NS

Full Time		**S-1**	**S-2**	**S-3**
GERMAN				
	BA	336.667(3)	647.833(6)	(0)
	AA	458.000(2)	(0)	805.667(3)
Significance		NS	----	----

(N) = Sample Size
NS = Not Significant

TABLE 34 (continued)   Page 2 of 2

Full Time		S-1	S-2	S-3
All Languages Except Russian				
	BA	389.700(60)	686.156(45)	684.000(7)
	AA	269.100(20)	535.167(48)	790.778(18)
Significance		.01	.01	NS

TABLE 35

Mean Hours in Training*

Language	S-1	S-2	S-3
FRENCH			
ALL	267.971(141)	612.706(163)	776.143(35)
FT	355.585(82)	650.788(146)	795.088(34)
PT-ALL	146.203(59)	285.647(17)	-----------
PT-A	165.810(21)	341.750(12)	-----------
PT-B	135.368(38)	151.000(05)	-----------
SPANISH			
ALL	286.594(111)	520.168(101)	690.946(37)
FT	340.691(81)	558.813(91)	706.667(36)
PT-ALL	140.533(30)	168.500(10)	-----------
PT-A	170.4(10)	227.5(04)	-----------
PT-B	125.6(20)	129.167(06)	-----------
GERMAN			
ALL	247.191(42)	551.087(41)	681.222(09)
FT	324.286(21)	598.031(32)	694.000(07)
PT-ALL	170.095(21)	384.222(09)	636.5(02)
PT-A	199.000(13)	384.222(09)	635.5(02)
PT-B	122.000(08)	-----------	-----------
RUSSIAN			
ALL	222.667(18)	782.750(04)	1068.667(06)
FT	663.000(03)	1323.500(02)	1391.000(04)
PT-ALL	134.6(15)	242.000(02)	424.000(02)
PT-A	-----------	-----------	-----------
PT-B	130.5(14)	-----------	-----------

*Enter = 0.0/0.5
(N) = Sample Size
----- = Missing Data

TABLE 36

Inter-Language Hours Comparisons

Languages Compared	S-1	S-2	S-3
	Exit Proficiency		
FT Training-All			
French-Spanish	NS	.01	NS
French-German	NS	NS	NS
French-Russian	.01	.01	.01
Spanish-German	NS	NS	NS
Spanish-Russian	.05	.01	.01
German-Russian	.01	.05	.01
PT Training-All			
French-Spanish	NS	NS	- - -
French-German	NS	NS	- - -
French-Russian	NS	NS	- - -
Spanish-German	NS	NS	- - -
Spanish-Russian	NS	NS	- - -
German-Russian	NS	NS	NS

NS = not Significant
- - - = not enough data to compare samples
.01/.05 = values of statistical significance

TABLE 37

Intra-Language Hours Comparisons

	Exit Proficiency		
Comparison	S-1	S-2	S-3
PT-ALL vs. FT			
French	.01	.01	---
Spanish	.01	.01	---
German	.01	NS	NS
Russian	.01	NS	.05
PT-A vs. FT			
French	.01	.01	---
Spanish	.05	.01	---
German	.01	NS	NS
Russian	---	---	---
PT-B vs. PT-A			
French	NS	NS	---
Spanish	.05	NS	---
German	NS	---	---
Russian	---	---	---

NS = not significant
--- = not enough data to compare samples
.01/.05 = values of statistical significance

TABLE 38

Significant Intra-Language Hours Comparisons*

	S-1 vs. S-2	S-2 vs. S-3
FRENCH		
PT	.01	- - - -
FT	.01	.01
SPANISH		
PT	NS	- - - -
FT	.01	.01
GERMAN		
PT	.05	NS
FT	.01	NS
RUSSIAN		
PT	.01	NS
FT	NS	NS

* Enter = 0.0/0.5
NS = Not Significant
- - - - = Missing Data

TABLE 39

French Regression Equations

Full Time Students with Prior Training

1. $$\text{Predicted Exit Score} = 19.3238+0.5909(\text{ENTER})+0.0124(\text{HOURS})+0.6979(\text{PROF2})+1.5221(\text{MLAT4})-1.0943(\text{MLAT.TOTAL})-4.0635(\text{BIO39})+0.3542(\text{MLAT3})+1.0931(\text{TTS2})$$

Full Time Students with Prior Training

2. $$\text{Predicted Improvement Score} = 25.1359-0.4189(\text{ENTER})+0.0115(\text{HOURS})+0.6480(\text{PROF2})+1.5557(\text{MLAT4})-1.1606(\text{MLAT.TOTAL})-1.7889(\text{RC})+0.4227(\text{MLAT3})$$

Full Time Students With No Prior Training

3. $$\text{Predicted Exit Score} = 17.4754+0.0135(\text{HOURS})+2.2571(\text{BIO39})-0.5047(\text{SP})+0.2555(\text{MLAT5})+0.4836(\text{RV})+0.00806(\text{MLAT3})$$

Full Time Students With No Prior Training

4. $$\text{Predicted Improvement Score} = 15.6420+0.0141(\text{HOURS})+2.7011(\text{BIO39})-0.4634(\text{SP})+0.0733(\text{MLAT3})+0.1691(\text{MLAT5})+0.4101(\text{RV})$$

ENTER = entering proficiency
HOURS = hours in training
PROF2 = proficiency in a language other than the one studied

TABLE 40

Spanish Regression Equations

All Full Time Students

1. Predicted Exit Score = -39.8052+0.5032(ENTER)+0.0144(HOURS)+1.0539(IE) +0.322(MLAT3)+1.9030(BIO68)-0.8815(BIO79)

2. Predicted Improvement Score = -31.1861-0.5237(ENTER)+0.0143(HOURS)+0.8419(IE) +0.1563(MLAT3)+1.3312(BIO68)

Full Time Students With No Prior Training

3. Predicted Exit Score = -73.4842+1.9456(IE)+0.0145(HOURS)+0.2548(MLAT3) -0.3344(MLAT5)+0.8955(BIO68)-0.4027(AP)

4. Predicted Improvement Score = -57.0134+0.0145(HOURS)+1.5002(IE)+0.2260(MLAT3) -0.3120(MLAT5)+1.2449(BIO68)

Full Time Students With Prior Training

5. Predicted Exit Score = 4.5502+0.4408(ENTER)+0.0102(HOURS) 0.9778(RV) +0.3611(MLAT2)-0.2711(MLAT5)+0.9380(BIO66)

6. Predicted Improvement Score = 5.1792-0.5605(ENTER)+0.0101(HOURS)+0.9450(RV)+ 0.3319(MLAT2)-0.2621(MLAT5)+1.0018(BIO66)

ENTER = entering proficiency
HOURS = hours in training

TABLE 41

German Regression Equations

All Full Time Students

1. $$\text{Predicted Exit Score} = -56.9929+2.1685(\text{RE})+0.9208(\text{ENTER})+5.4172(\text{BIO79})-1.8535(\text{BIO89})+6.7522(\text{BIO40})$$

All Full Time Students

2. $$\text{Predicted Improvement Score} = -53.3691+2.4855(\text{RE})+6.9943(\text{BIO79})-8.5514(\text{BIO49})+2.7983(\text{BIO40})-0.0055(\text{HOURS})-0.0432(\text{ENTER})$$

Male Full Time Students Only

3. $$\text{Predicted Exit Score} = 1.3476+2.0882(\text{RE})-4.2037(\text{SVMALE15})-6.7834(\text{BIO49})$$

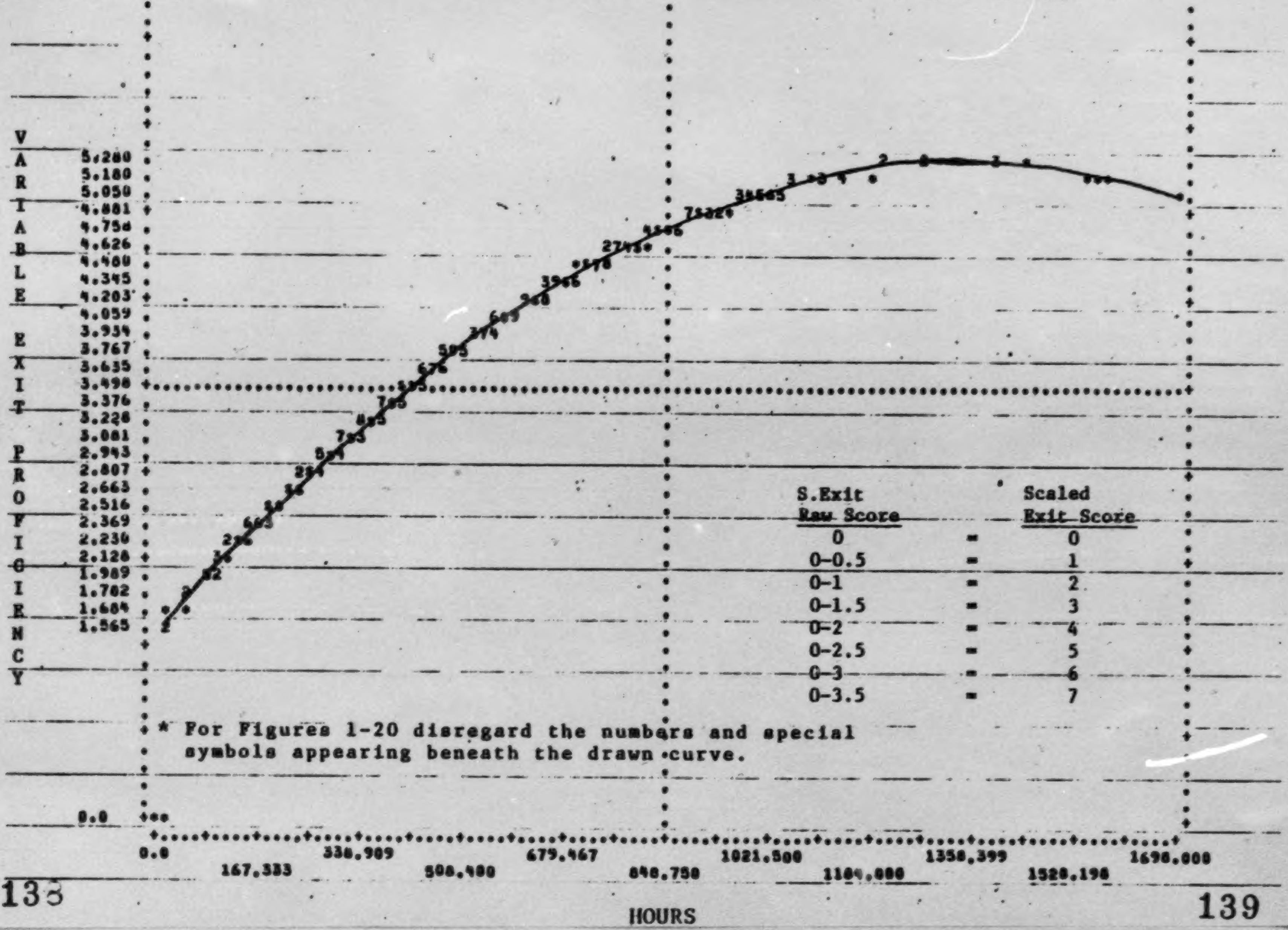
Male Full Time Students Only

4. $$\text{Predicted Improvement Score} = -49.8577+2.2784(\text{RE})+7.1707(\text{BIO79})-9.2508(\text{BIO49})+3.4817(\text{BIO40})$$

ENTER = entering proficiency
HOURS = hours in training

FIGURE 1 *

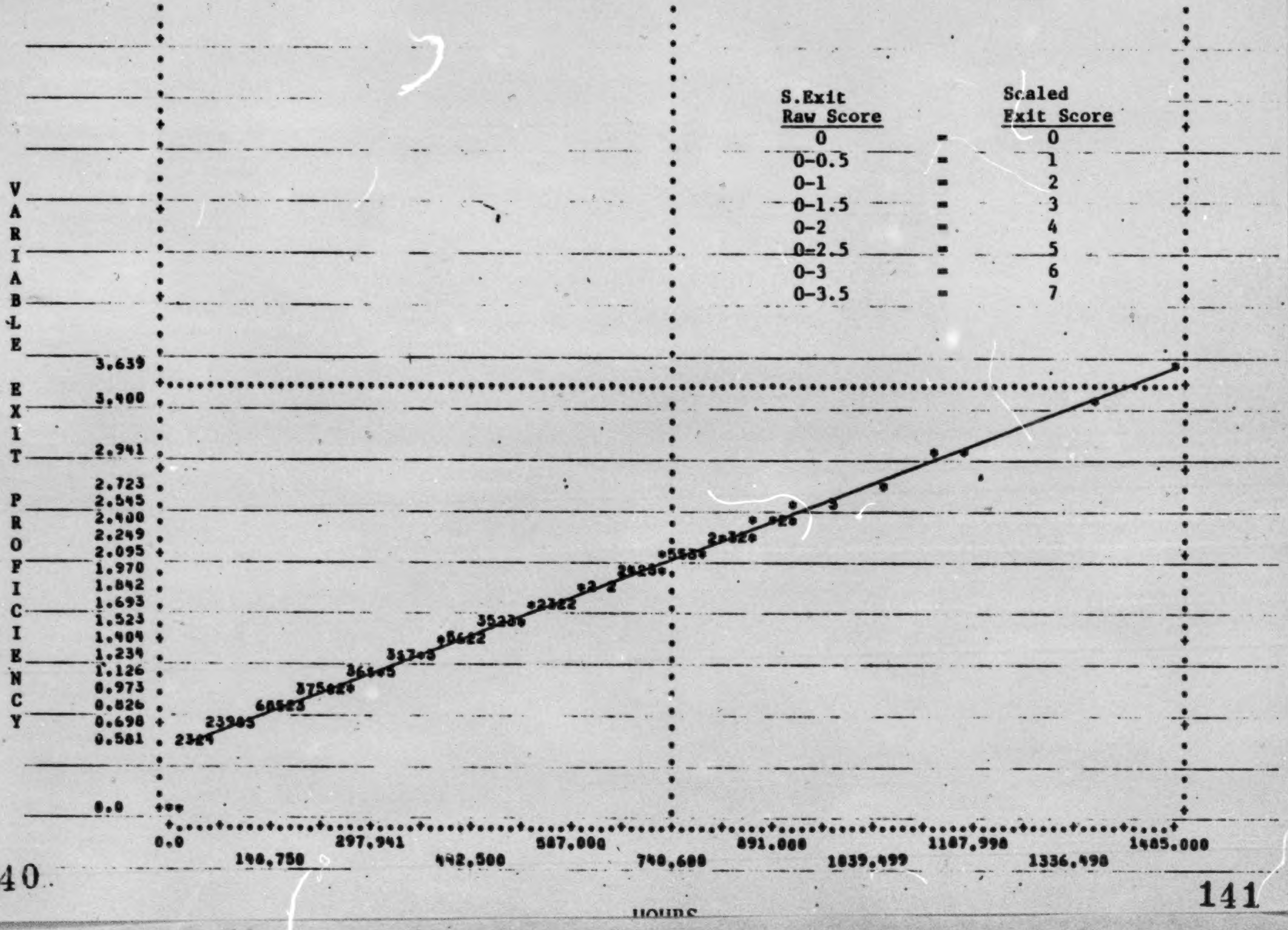
Enter Proficiency 0 or 0+ All Languages - FT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

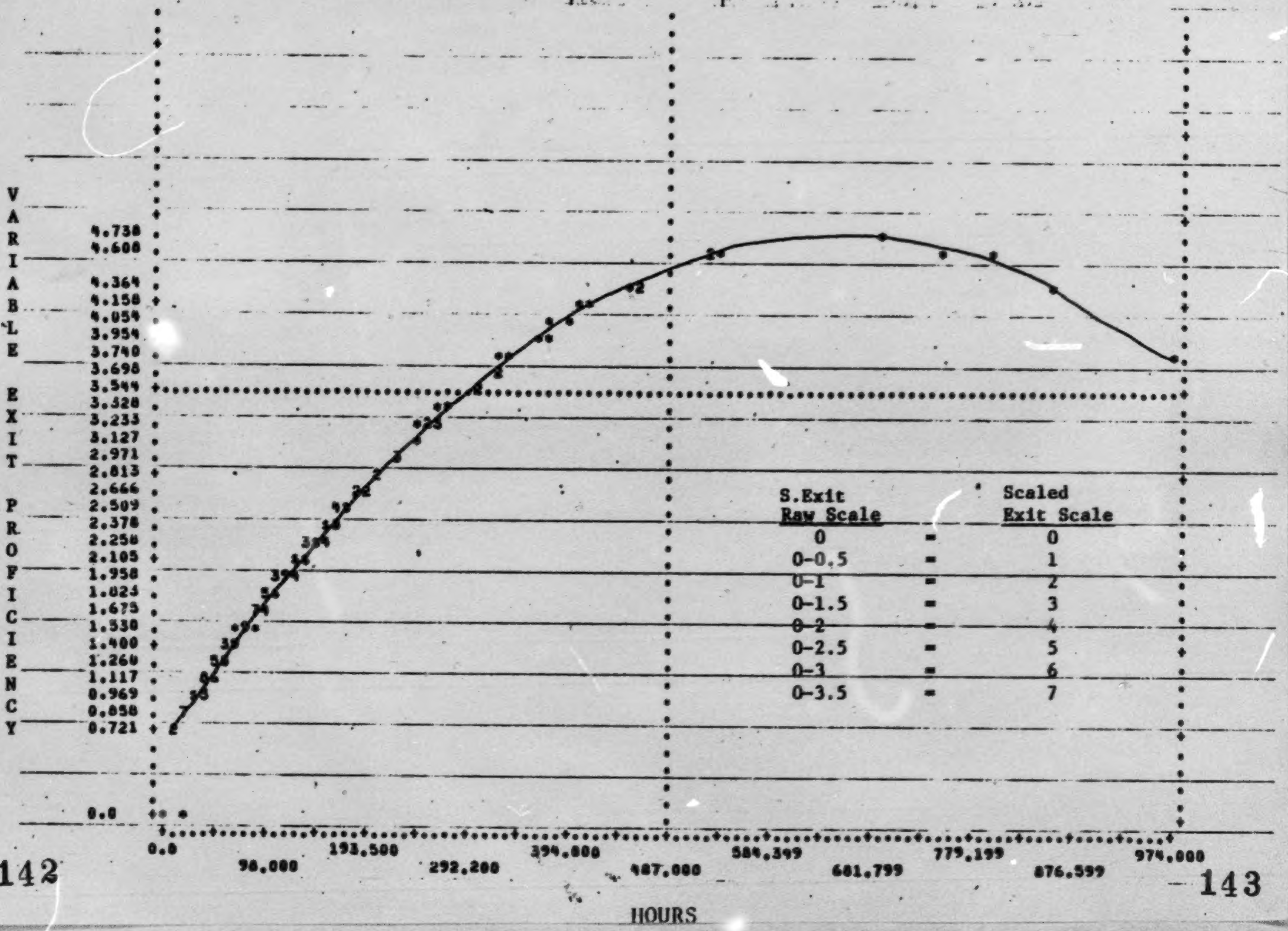
* For Figures 1-20 disregard the numbers and special symbols appearing beneath the drawn curve.

FIGURE 2
Enter Proficiency 1.0 or Higher All Languages - FT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 3
Enter Proficiency 0 or 0+ All Languages - PT Only



S.Exit Raw Scale		Scaled Exit Scale
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 4

Enter Proficiency 10 or More All Languages ; PT Only

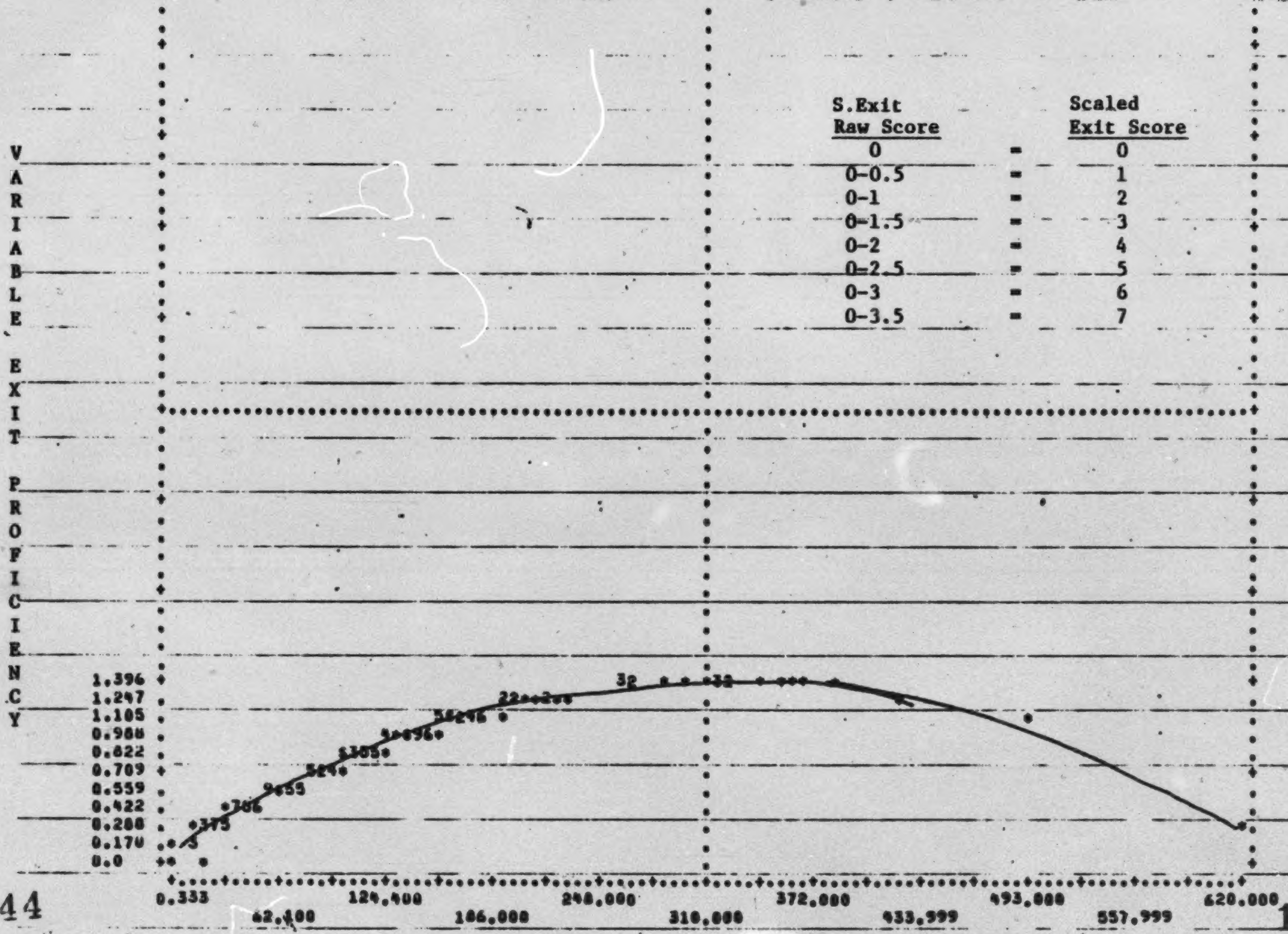
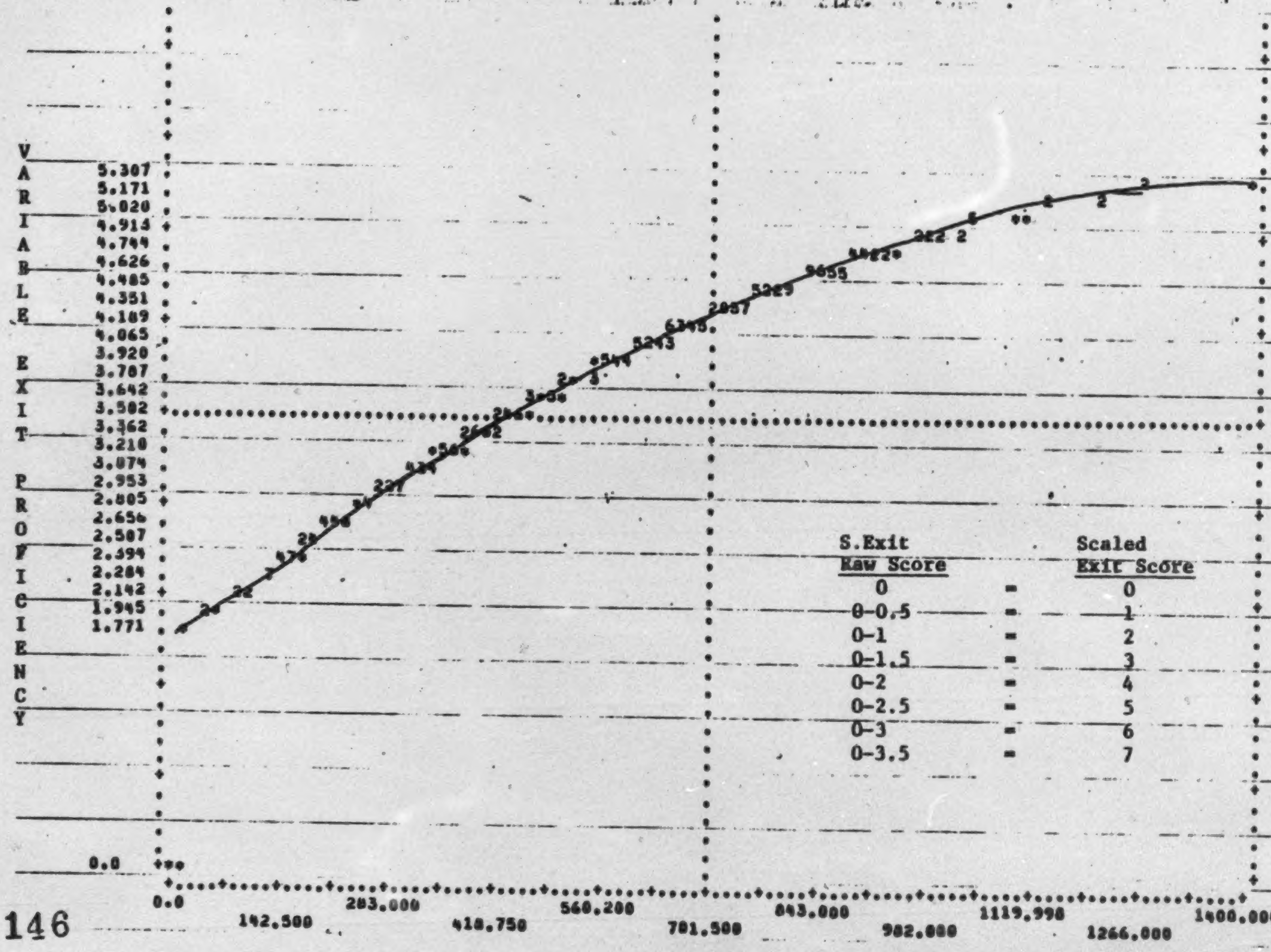


FIGURE 5

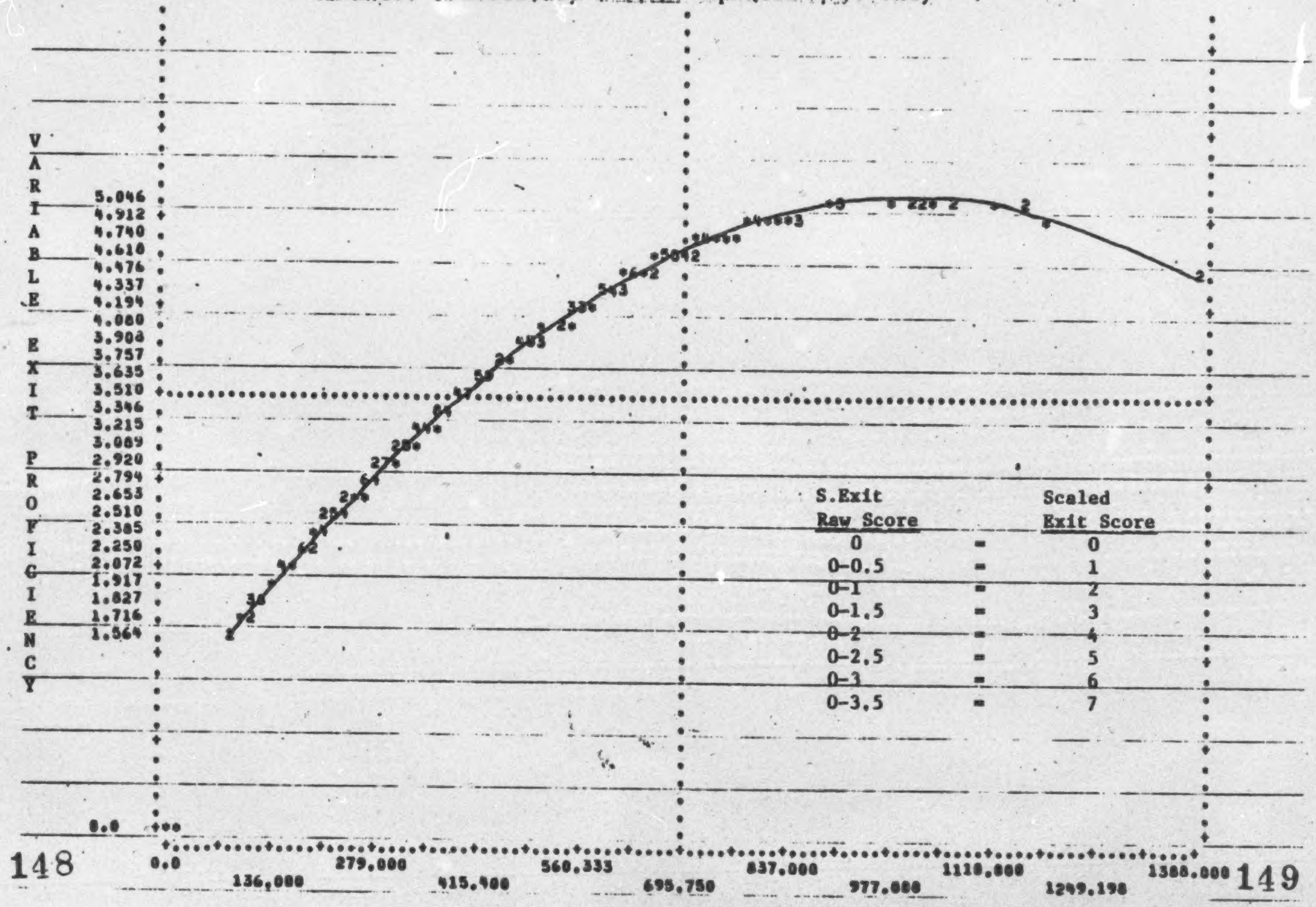
Enter Proficiency 0 or 0+ French - FT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 6

Enter Proficiency 0 or 0+ Spanish - FT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 7

Enter Proficiency 0 or 0+ German - FT Only

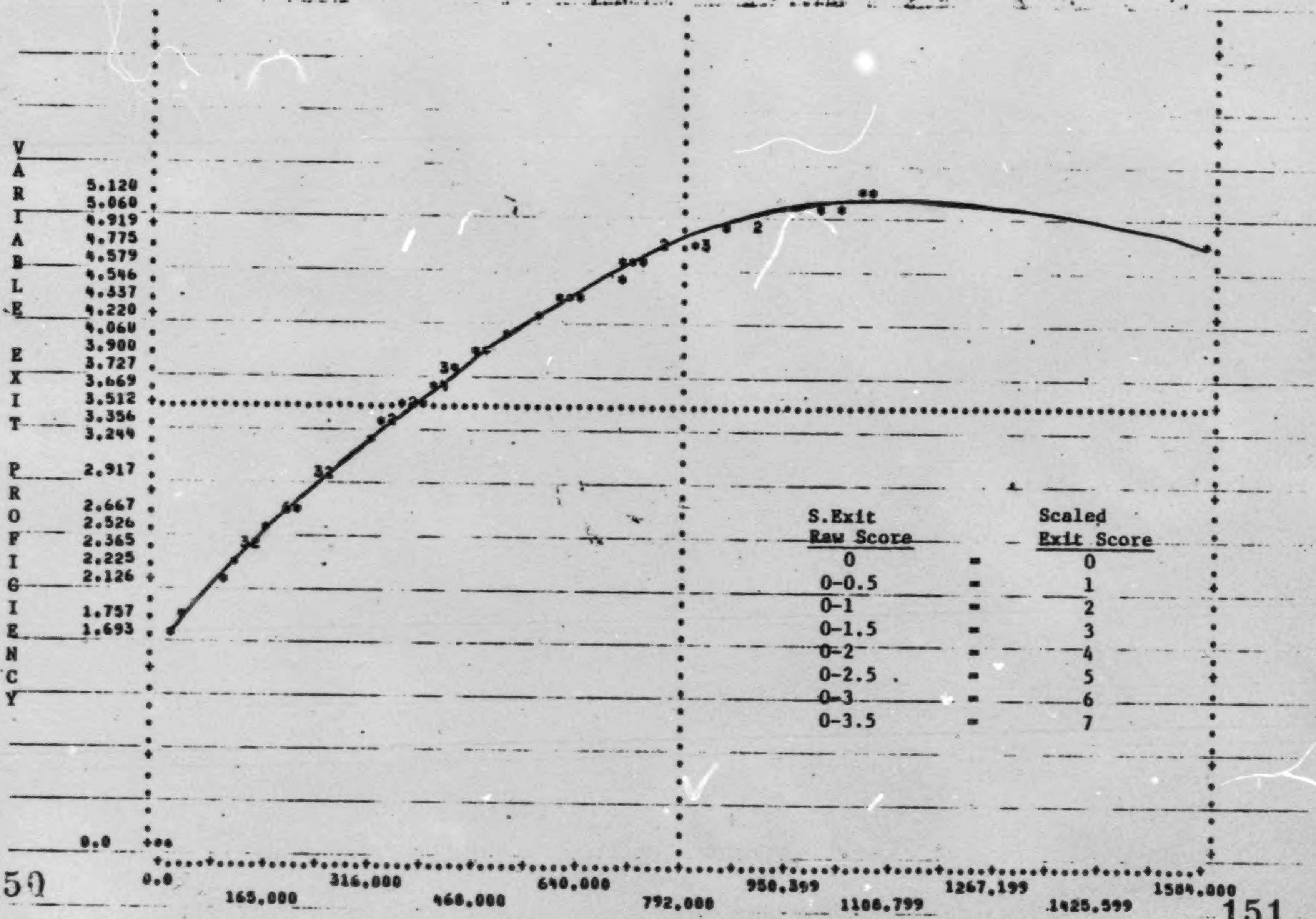


FIGURE 8

Enter Proficiency 0 of 0+ Russian - FT Only

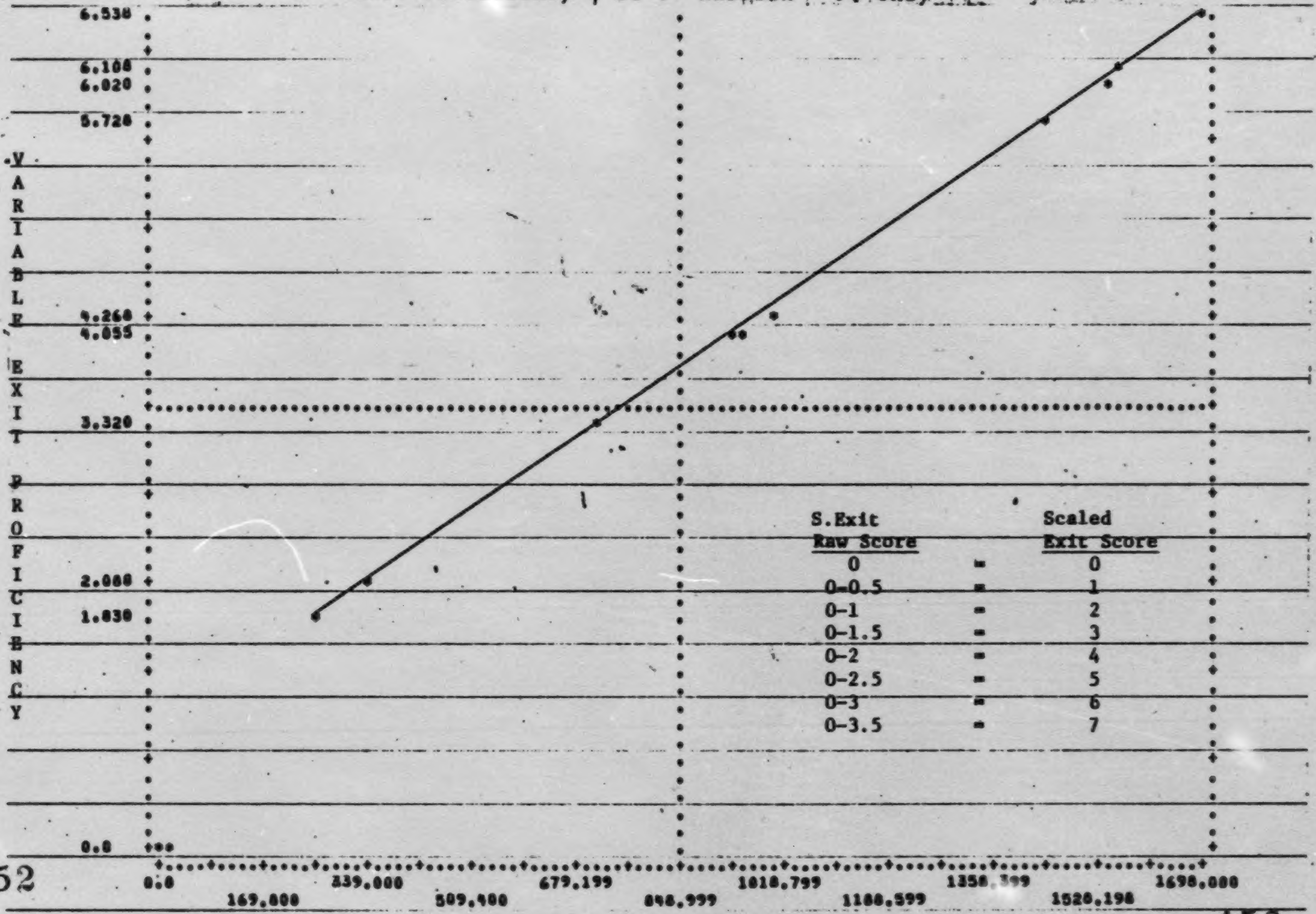
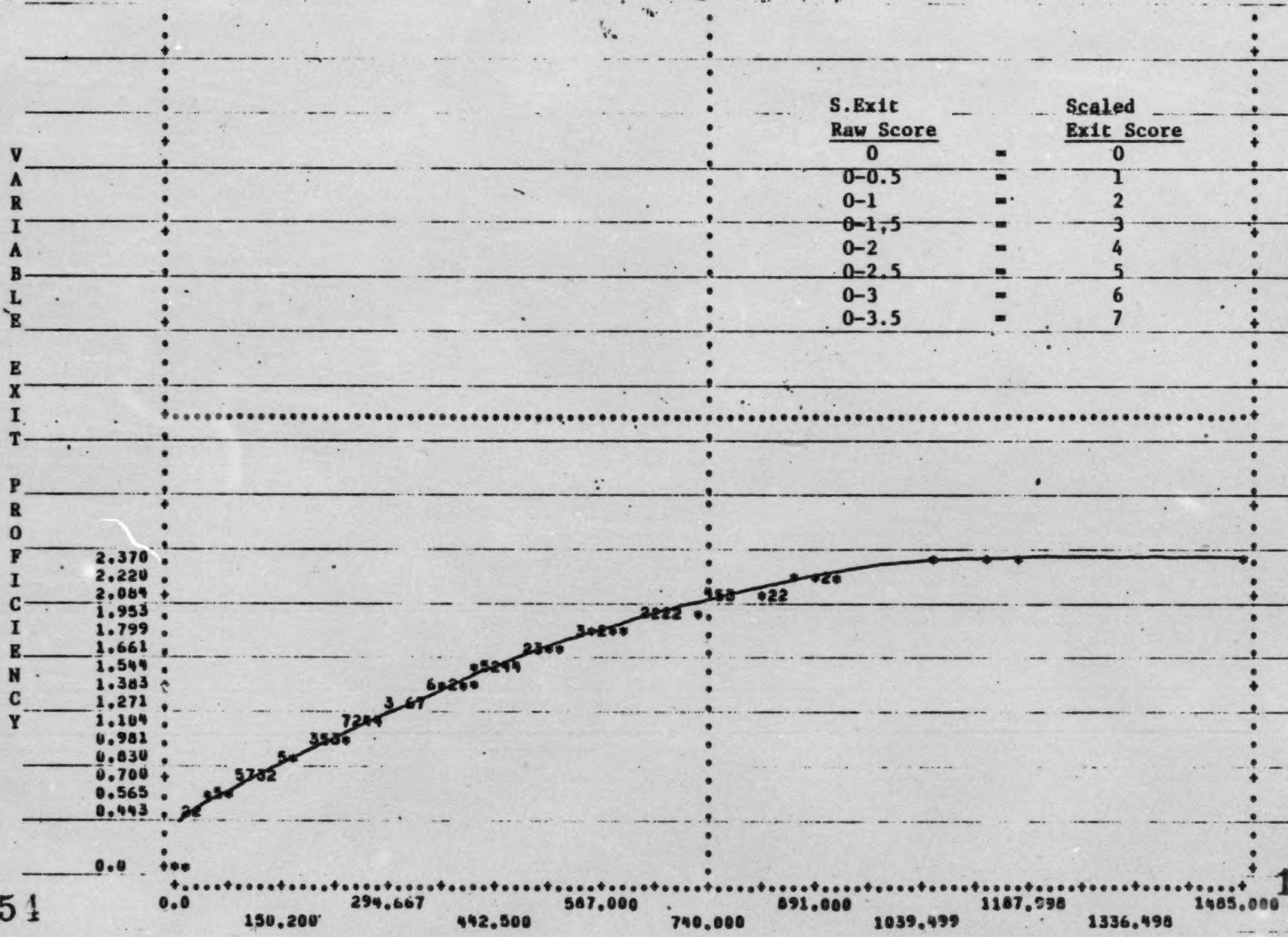


FIGURE 9

Enter Proficiency 10 or More French.FT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 10

Enter Proficiency 10 or More Spanish - FT Only

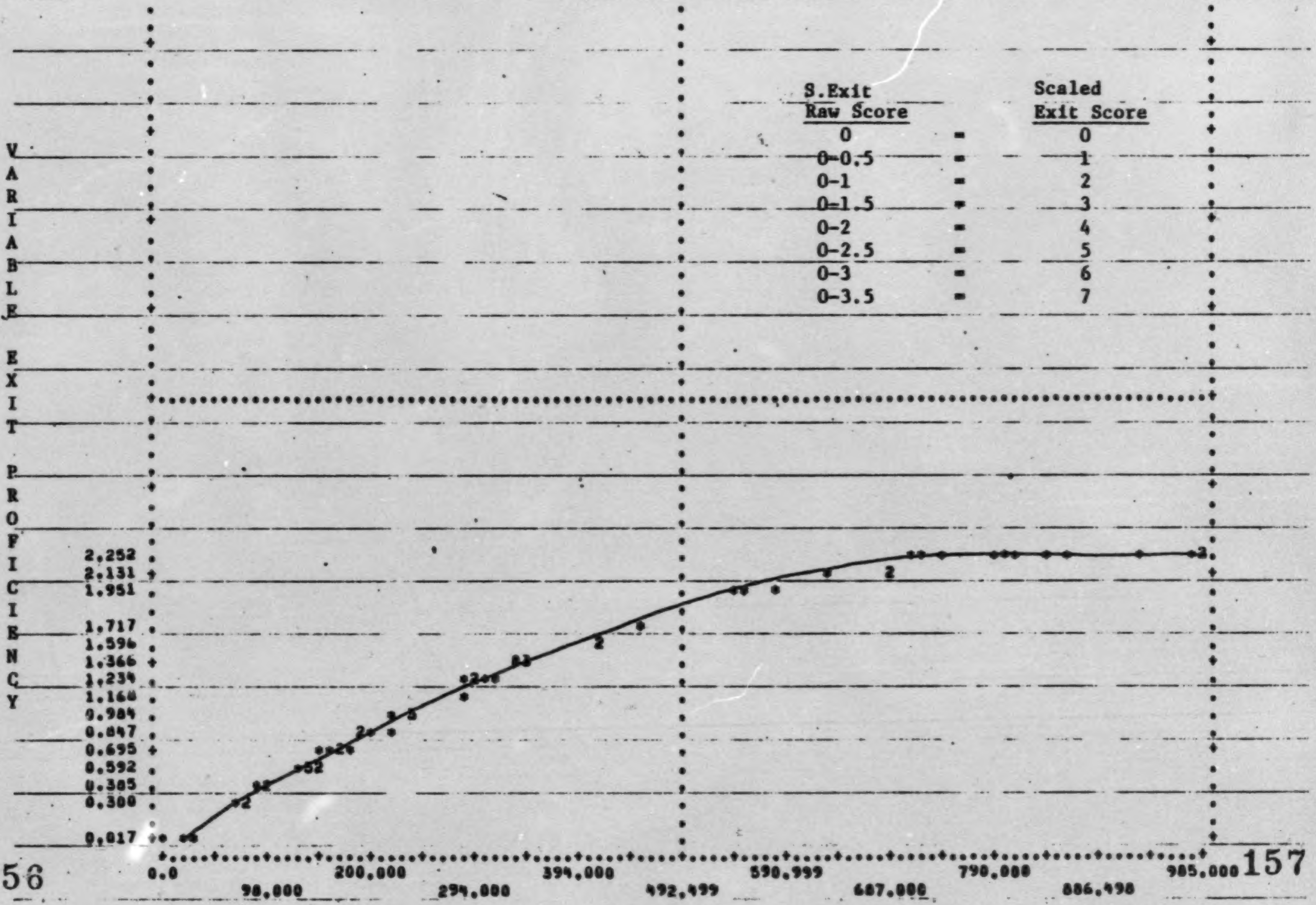


FIGURE 11
Enter Proficiency 1.0 or More German - FT Only

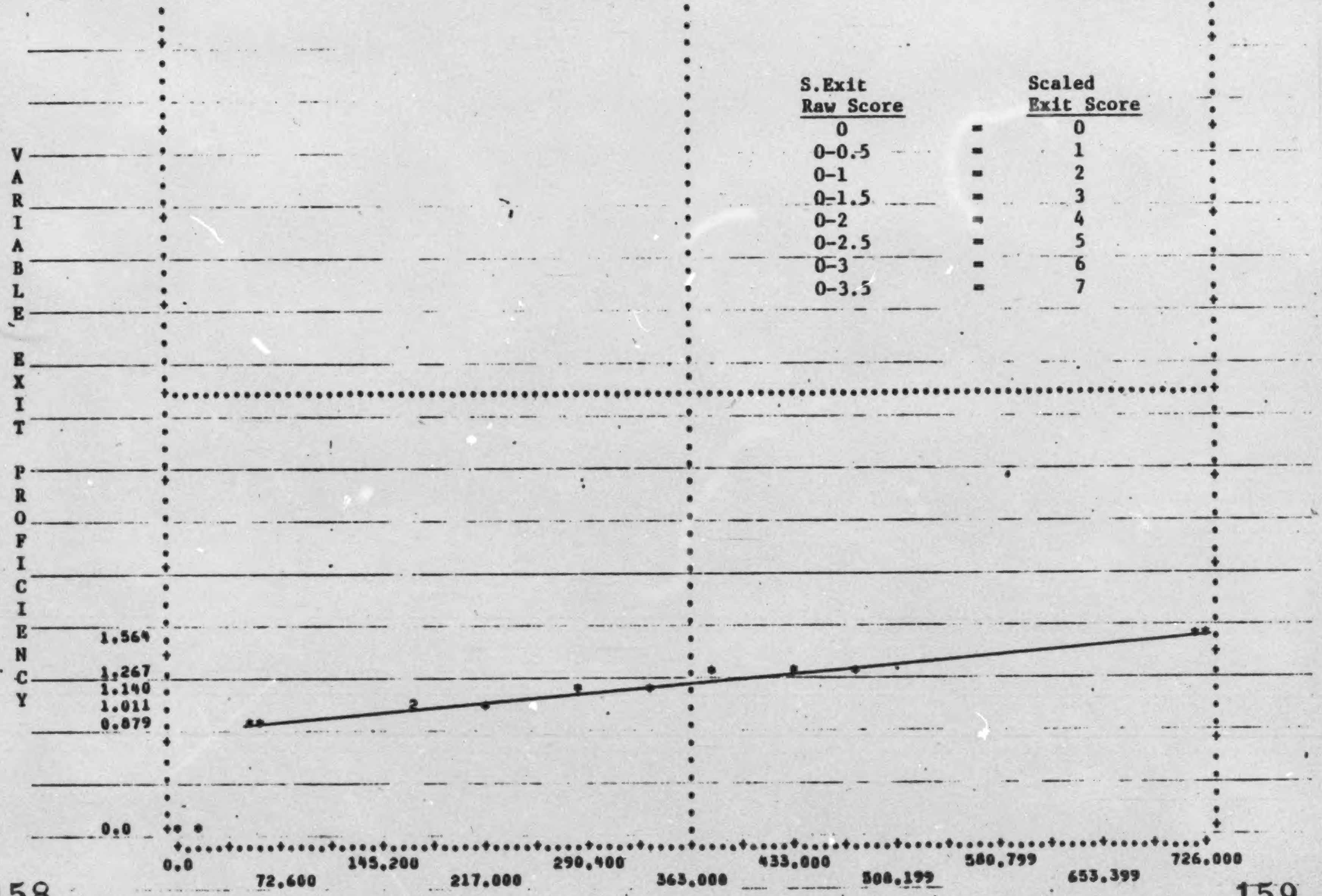


FIGURE 12

Enter Proficiency 1.0 or More Russian - FT Only

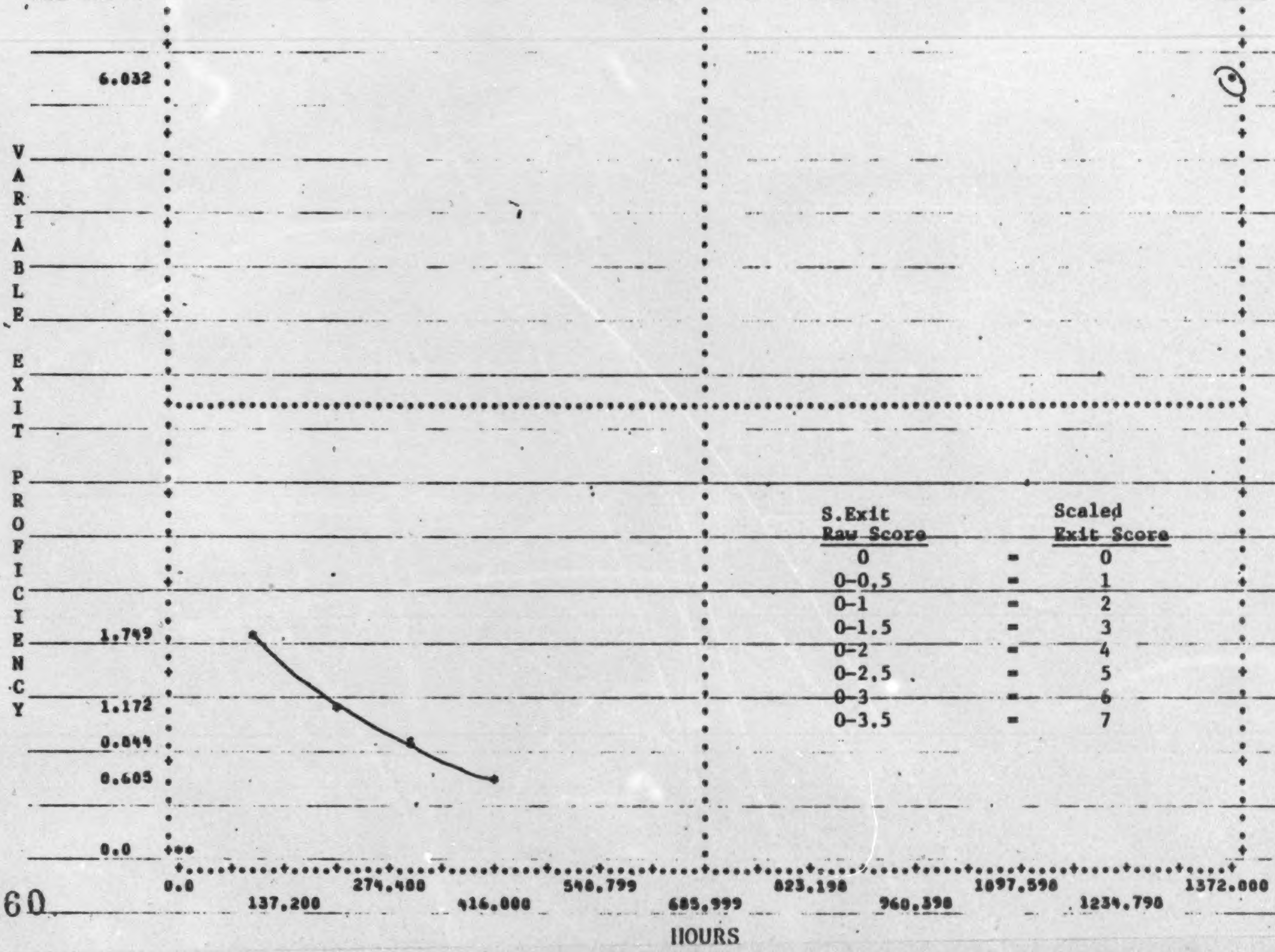


FIGURE 13

Enter Proficiency 0 or 0+ French - PT Only

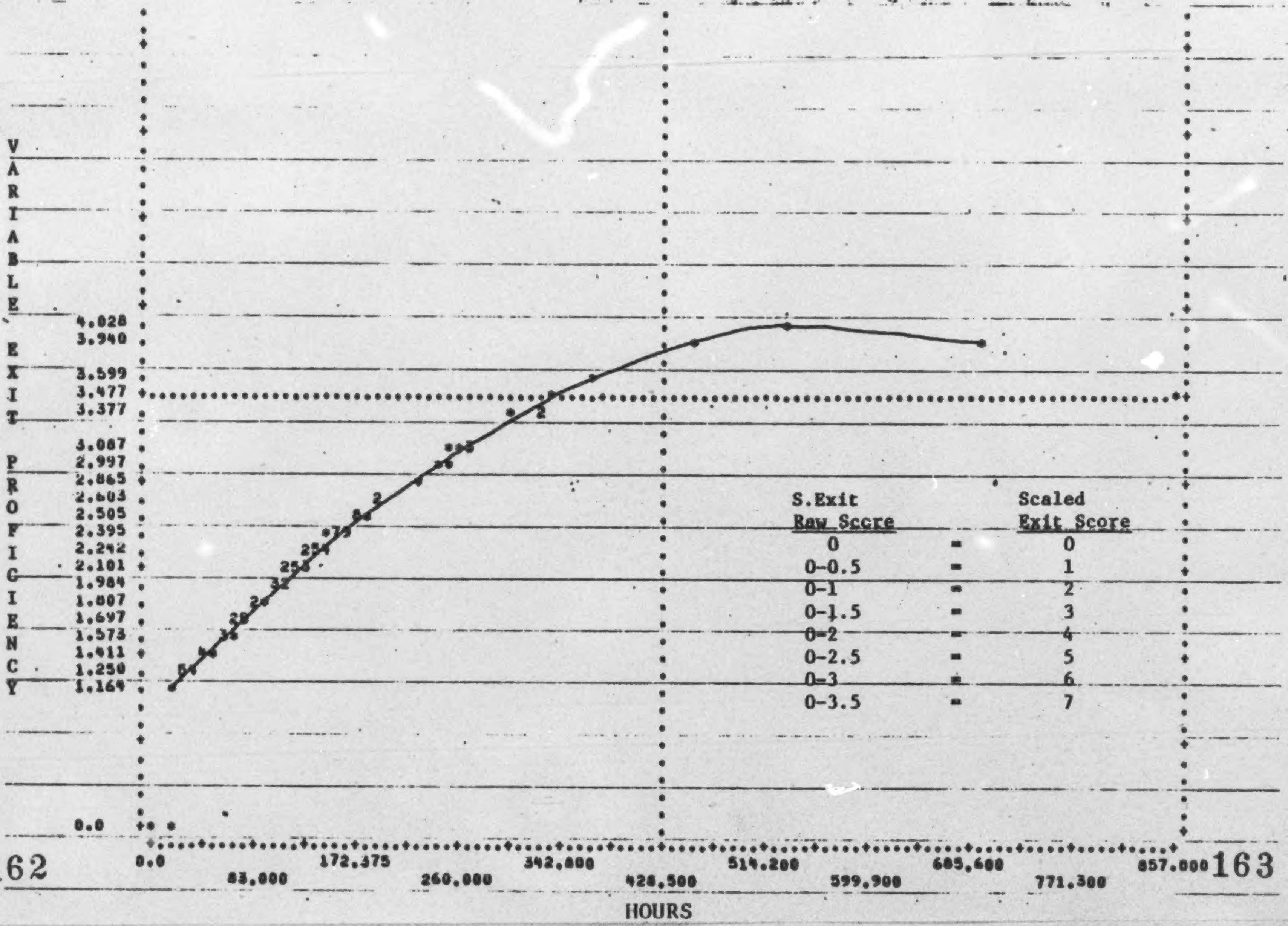
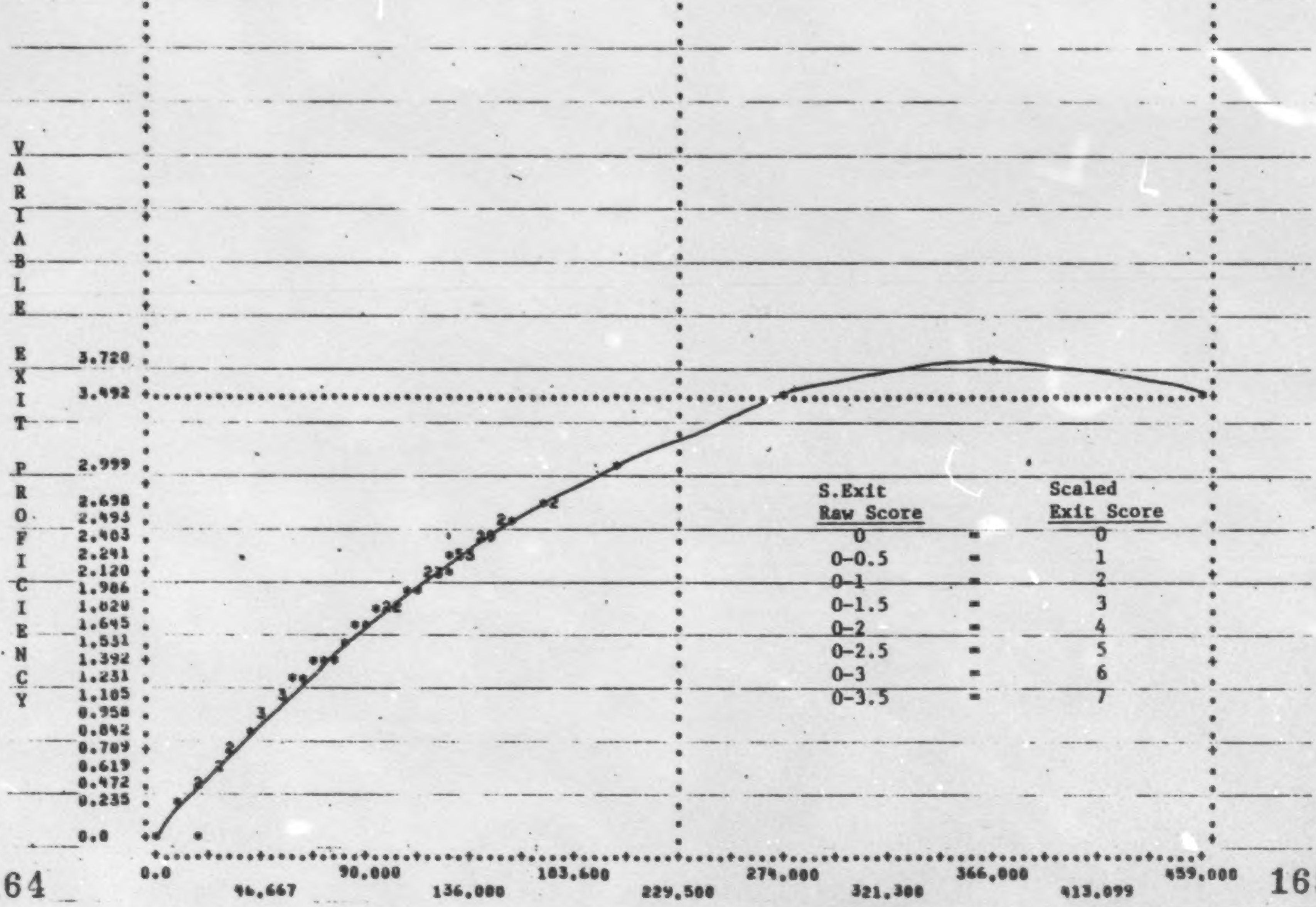


FIGURE 14

Enter Proficiency 0 or 0+ Spanish - PT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 15

Enter Proficiency 0 or 0+ German - PT Only

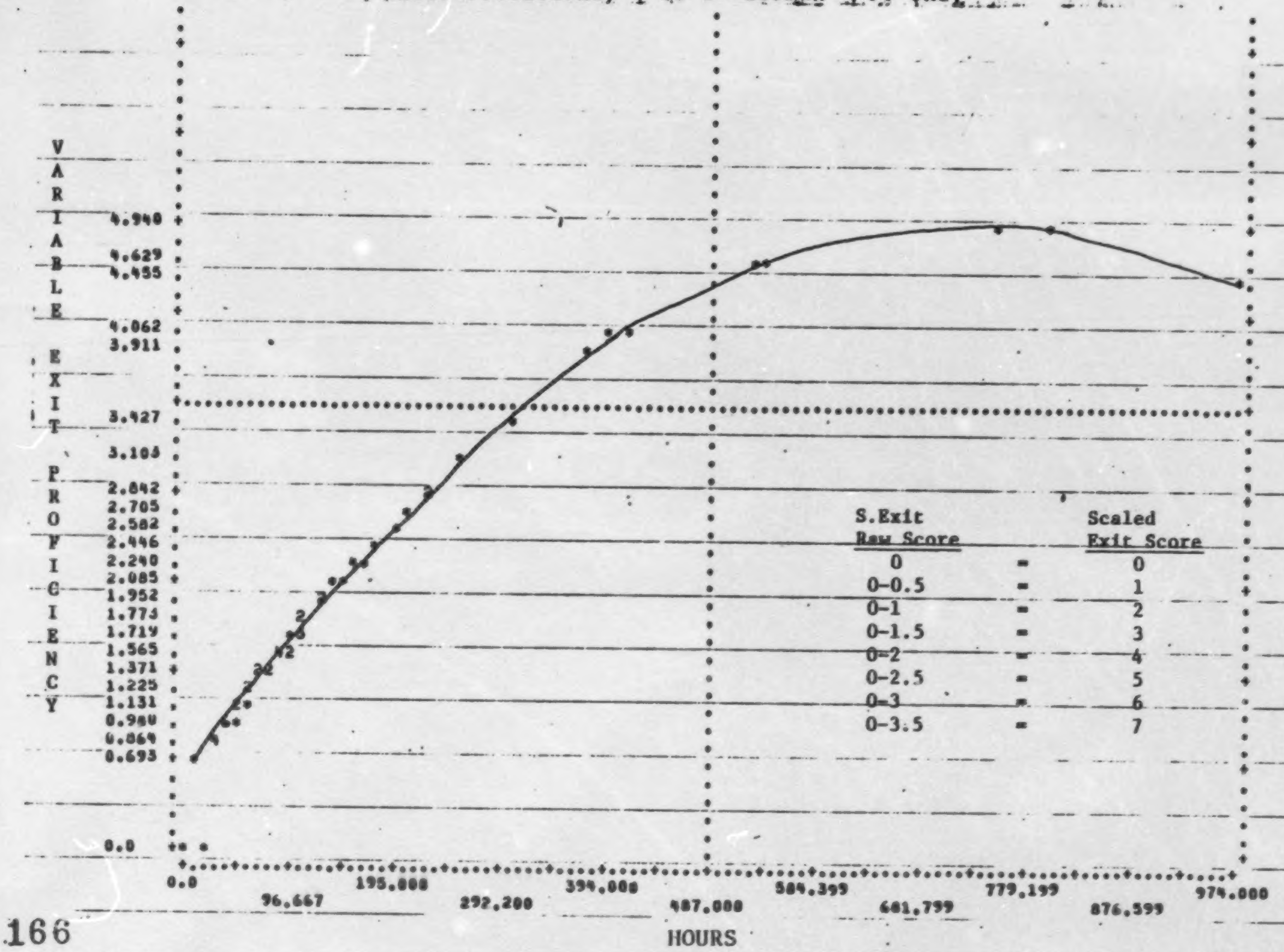


FIGURE 16
Enter Proficiency 0 or 0+ Russian - PT Only

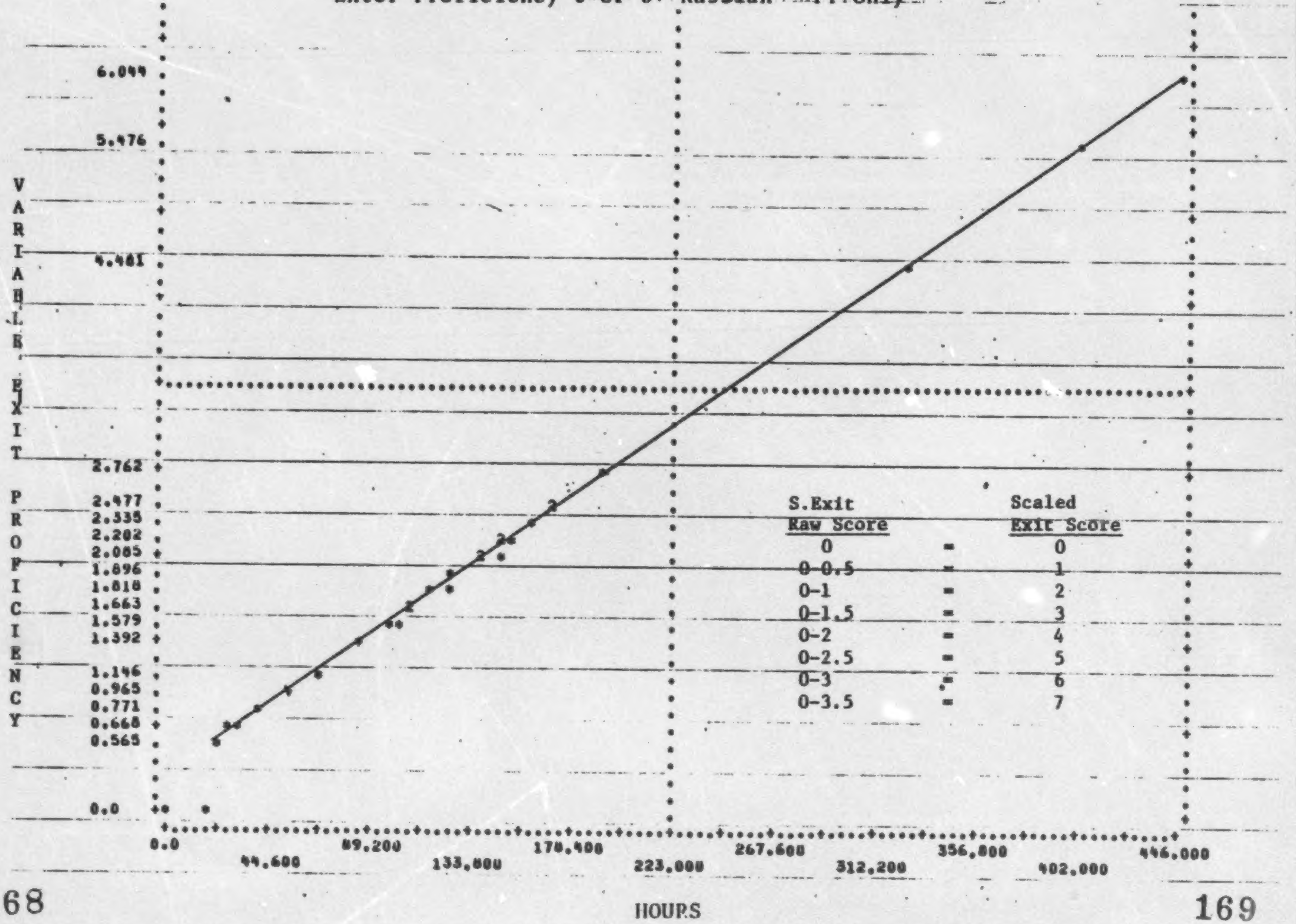
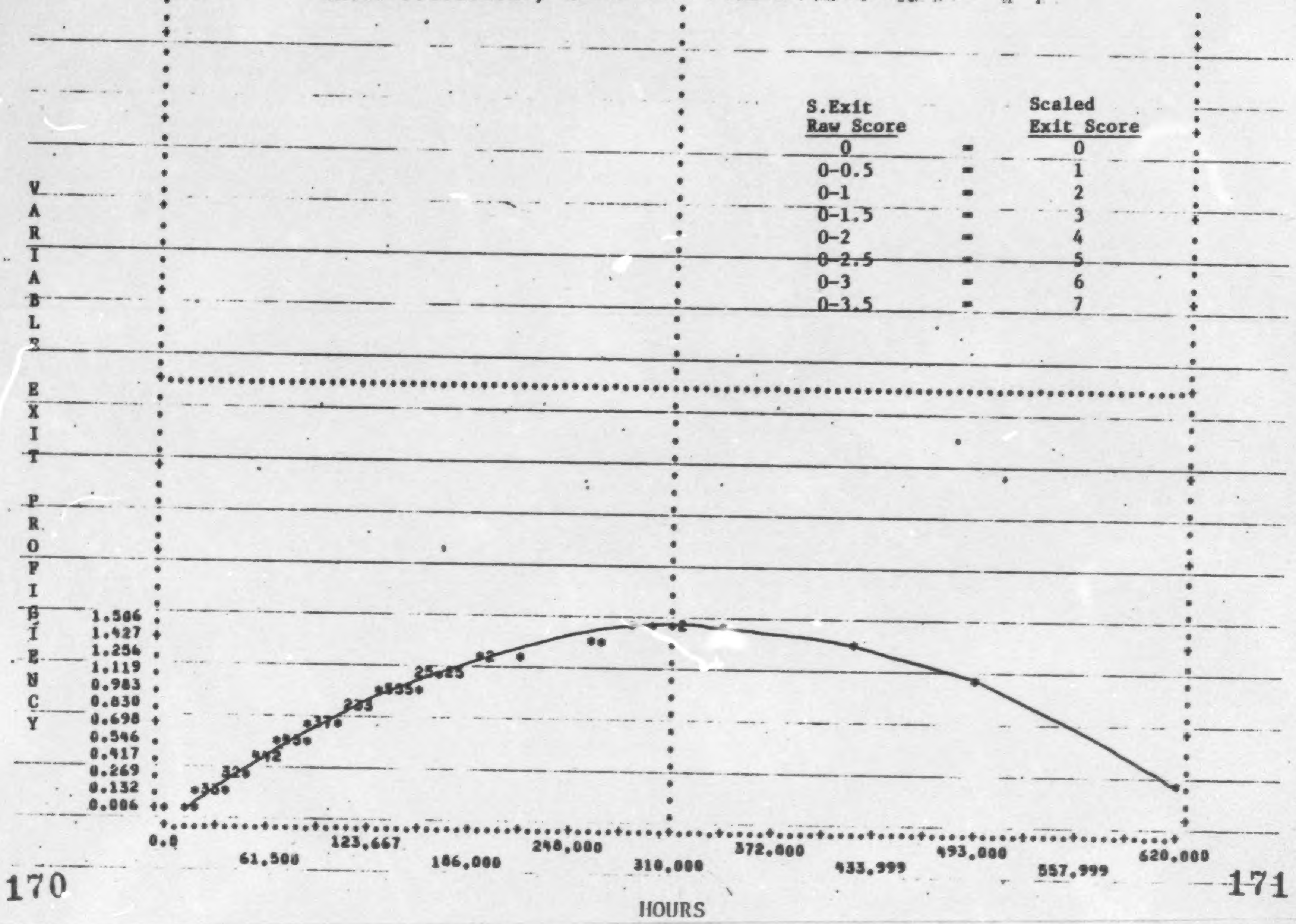


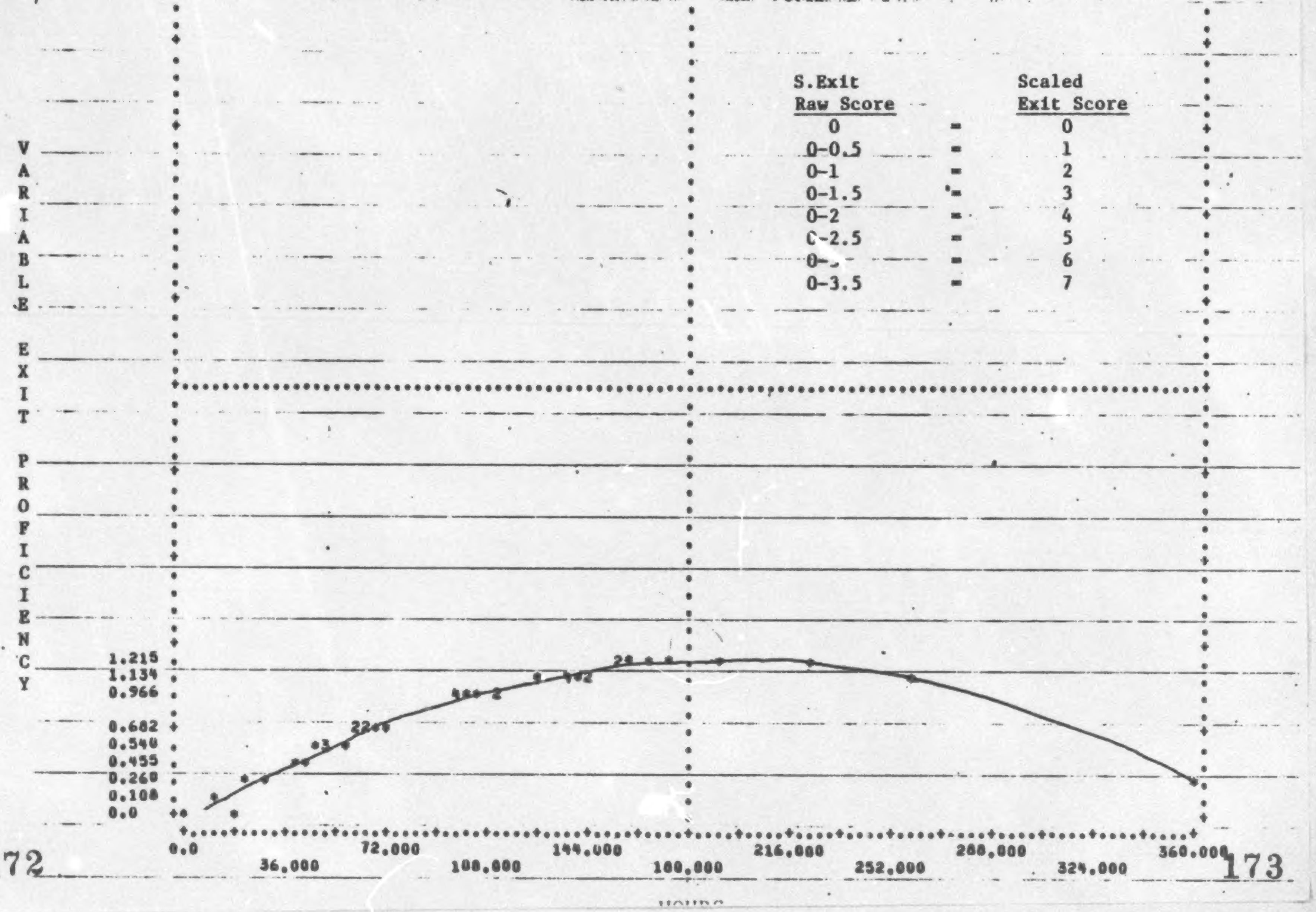
FIGURE 17
Enter Proficiency 1.0 or More French - PT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 18

Enter Proficiency 1.0 or More Spanish - PT Only



S.Exit Raw Score		Scaled Exit Score
0	=	0
0-0.5	=	1
0-1	=	2
0-1.5	=	3
0-2	=	4
0-2.5	=	5
0-3	=	6
0-3.5	=	7

FIGURE 19
Enter Proficiency 1.0 or More German - PT Only

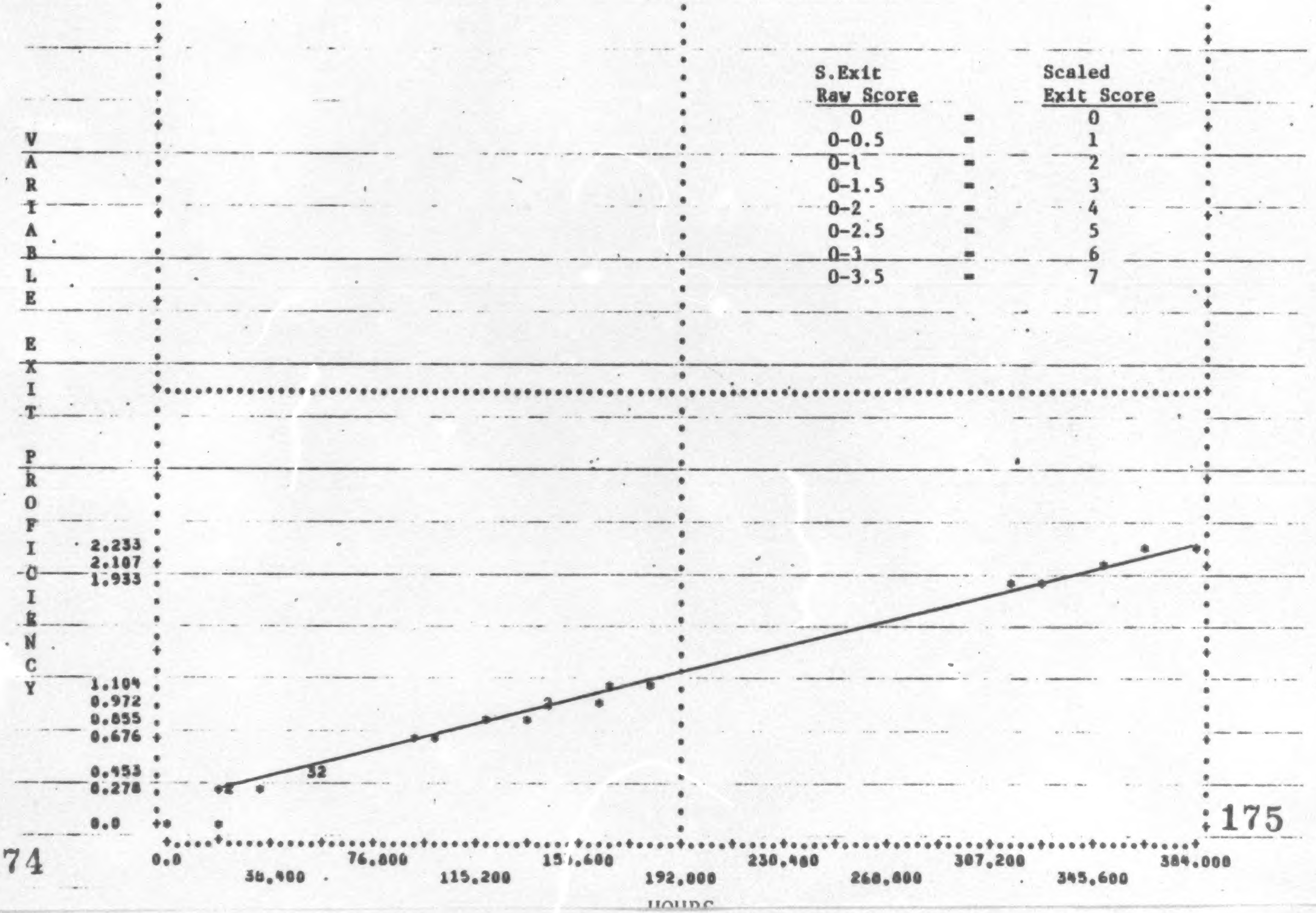
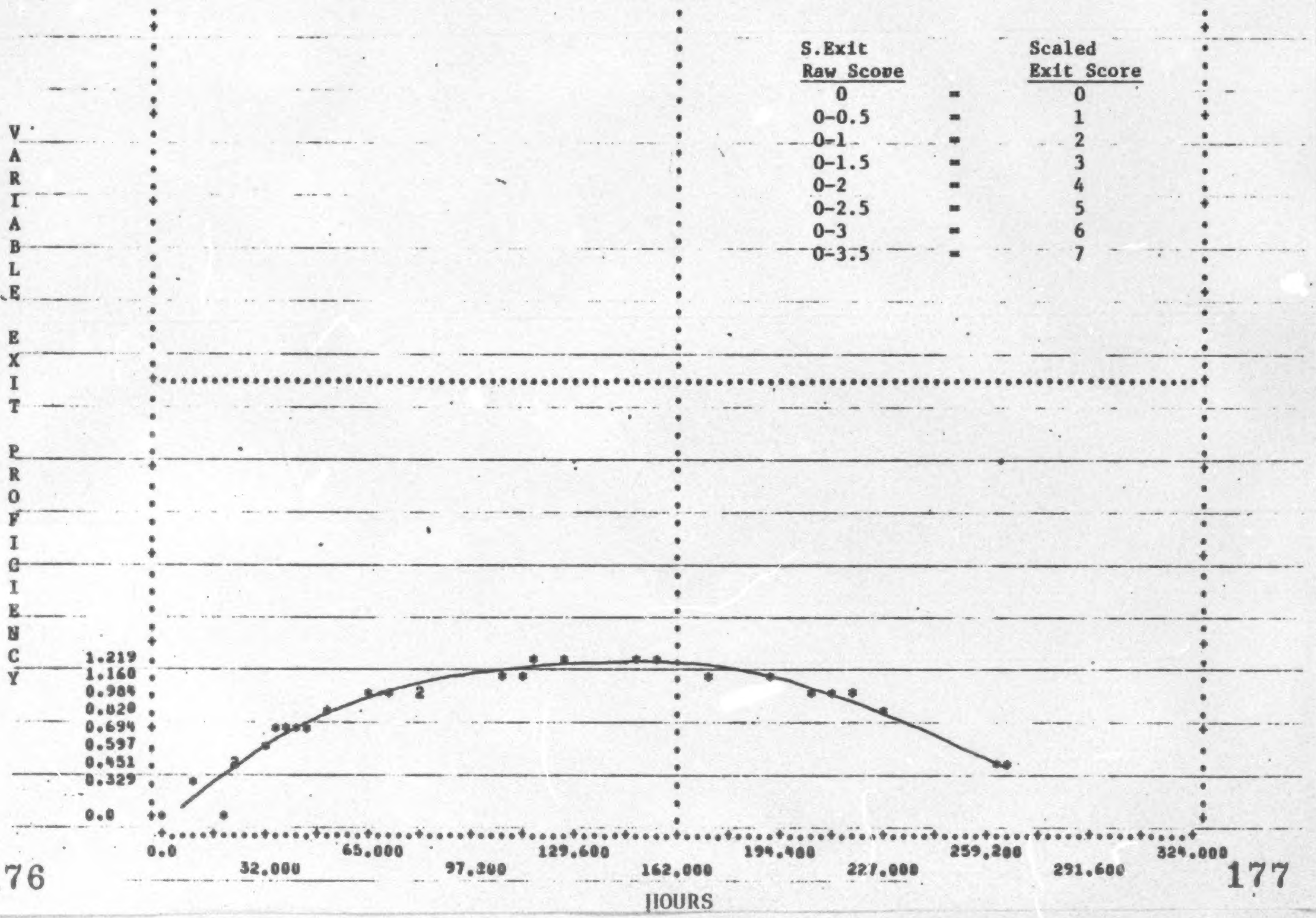


FIGURE 20

Enter Proficiency 10 or More Russian -- PT Only